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Impact of the decentralization reform on the quality of local public services in Ukraine

Daria Kuznetsova
Iowa State University

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Daria Kuznetsova

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ABSTRACT

Decentralization, the transfer of authorities from the central government to local governments, tends to impact the performance of local authorities. These impacts are felt through changes in the allocation of revenue patterns, improvements to the quality of, and access to, public services, and relocation of decision-making to a local level. The ongoing decentralization reform in Ukraine simultaneously features administrative, fiscal and political decentralization of power. It is expected that the reform will facilitate community development and improve quality of life by empowering the lowest levels of government. This study analyzes changes in the quality of public services in the cities of regional significance in Ukraine since the beginning of the decentralization reform in 2014. Using the data from the Ukrainian Municipal Survey 2015-2018, we compared the quality of public services rated by the residents of the 24 cities in 2015 and 2018. We found that the overall quality of public services improved within the measured period with only the quality of medical institutions showing a slight decrease. The largest improvements were observed in the quality of road infrastructure and public parks. We attribute these improvements to increased government transparency and accountability, as well as local governments' ability to address local issues. Increased revenues and reductions in corruption also contributed to the improvement in the quality of public services. However, regardless of the improved average quality, some cities show significant decreases in some, or most, of the services. Among the 24 surveyed cities, 18 improved the average quality of public services. The citizens of the remaining six cities rated the quality as decreased. The estimated decreases vary from 0.9% in Ternopil to 9.1% in Chernivtsi. Based on the inconsistency in the change of the quality of public services, we recommend a process for monitoring of actions, expenditures, and budgets at local levels of

government, linked with their actions for improving the quality of local services. Secondly, local governments should facilitate actions that address the current low level of public participation and engagement in local decision-making. Additionally, shifting the responsibility of providing public services from local governments to private companies and implementation of public-private partnerships will ensure more consumer oriented services, and therefore, higher quality of services due to market competition. Lastly, we call for well-trained officials to support comprehensive planning and economic development planning efforts in local governments.

CHAPTER 1. INTRODUCTION

Reforms that restructure local government systems have been widely introduced throughout the 20th century (Hanes & Wikström, 2010). There are multiple reasons for a decentralization reform to be implemented. Some examples include the introduction of multi-party political systems in African states, pursuing advances in democracy in Latin America, and supporting the transition to a market economy through the process of privatization in Eastern Europe (Kwon, 2012; Oates, 1999). In general, the implementation of decentralization policies by central governments tends to impact the performance of local governments, change the allocation of revenue patterns, improve quality and access to public services for communities' needs, and brings decision-making to a local level, enhancing the democracy of a state (Faguet, 2004; Kwon, 2012).

The objective of this study is to assess the effects of government decentralization on the quality of public services in major cities in Ukraine, where the decentralization reform has been under the implementation since 2014. Given the inconsistency of empirical results in previous studies on the quality of public services in decentralized municipalities, this study focused on whether the restructuring of Ukraine's government - administrative, fiscal and political decentralization occurring simultaneously – have led to improvements in the quality of public services. Additionally, we explored whether decentralized governments tend to focus more on improving public services that produce immediate observable improvements, such as road infrastructure and public parks and gardens.

According to the literature surrounding this topic, government decentralization tends to improve the provision of local public services by bringing the government closer to people. Administratively and politically decentralized local governments become more

receptive to local needs due to a reduction in the distance between the citizens and the government (Faguet, 2014; Wallis & Oates, 1988). The reduced distance also positively impacts the ability of local governments to implement policies according to the needs of diverse populations and the preferences of minority groups. Thus, a decentralized system provides more flexibility in accommodating the desires of a heterogeneous population (Brancati, 2006). Additionally, in order to satisfy local constituencies, recently decentralized governments tend to focus on policies that produce visible results in short terms, and that are easy and cheap to implement (Berney, 2011; Cordeiro Guerra & Lastra-Anadón, 2019). Fiscal decentralization introduces new responsibilities for the local governments in the allocation of budget funds which increases their financial abilities (Slack & Bird, 2013). However, fiscal decentralization tends to increase government expenditures and, in cases of high fragmentation and small size of government bodies, leads to a loss of "economies of scale" and a rise in the costs of administration (Oates, 1985). Also, regardless of the new ability to collect revenues on a local level, some local governments remain dependent upon transfers from the central government, what might negatively influence the effectiveness of local governments (Oates, 1999).

Studies show inconsistent results for the effects of decentralization on public services. While some studies report improvements in quality and access to public services (Cavalieri & Ferrante, 2016; Chen, Huang, & Li, 2017; Faguet & Sánchez, 2014; Freinkman, 2010; Galiani, Gertler, & Schargrodsky, 2008; Jiménez-Rubio, 2011; Kudamatsu, 2012), others find no effect or negative results in the provision of public services after the implementation of decentralization reforms (Akin, Hutchinson, & Strumpf, 2005; Alesina, Baqir, & Easterley, 1999; Antón, Muñoz de Bustillo, Fernández Macías, & Rivera, 2014; Besley &

Coate, 2003; Reingewertz, 2012; Sanogo, 2019). Some studies find mixed results and support that the success of decentralization policies depends on a country's level of income, size of communities, or its ethnic diversity (Cordeiro Guerra & Lastra-Anadón, 2019; Cuadrado-Ballesteros, García-Sánchez, & Prado-Lorenzo, 2012; Khaleghian, 2004; Slack & Bird, 2013). Most work in this area has concentrated on explaining changes in the quality of education, medical institutions, and less in the quality of utilities, public services, and public spaces. In this study, we cover changes in the quality of utilities, road infrastructure, public transportation, sport facilities, cultural venues, and public parks and gardens, in addition to medical institutions and education.

To achieve our objectives, we use the decentralization reform in Ukraine as a case study. This setting is unique for studying decentralization reforms because of its overlap with a period of military conflict. For the analysis, the data on the quality of the local services for 24 major Ukrainian cities is collected from the Ukrainian Municipal Survey for years 2015, 2016, 2017 and 2018. We use descriptive statistics and regression models to analyze the data. We compare the change in the quality of services between the years 2015 and 2018 to see which public services improved the most in their quality and in which cities. We use a multiple regression model with a lagged explanatory variable to incorporate the feedback of the scores over time and test for significance in the rest of the explanatory variables in the model. A multiple linear regression model is used to determine a relationship between the change in the quality of the public services and demographic, economic, and political proxies. The analysis allows us to evaluate the reform's current progress and produce recommendations for the future of the decentralization reform in Ukraine.

This thesis is divided into five chapters. Chapter 2 discusses the definitions and types of decentralization, as well as the impacts of the decentralization reforms on the work of local governments and the quality of public services. Chapter 3 outlines the decentralization reform in Ukraine. Chapter 4 presents the results of the empirical analysis and discusses findings. Chapter 5 provides the conclusion and highlights for recommendations regarding the future implementation of the decentralization reform.

CHAPTER 2. LITERATURE REVIEW

Definitions, types, and forms of decentralization

There is a wide range of possible reasons for a central government to implement decentralization policies. For example, decentralization policies have been used to introduce multi-party political systems in African states, to pursue advances in democracy in Latin America, and to aid in transitioning to a market economy through the process of privatization in Eastern Europe (Kwon, 2012; Oates, 1999). Regardless of the reasons for implementation, decentralization policies tend to impact the performance of local governments, change the allocation of revenue patterns, improve quality and access to public services for communities' needs, and bring decision-making to a local level, enhancing the democracy of a state (Faguet, 2004; Kwon, 2012).

Researches recognize three types of decentralization; administrative, political, and fiscal decentralization (Siddle & Koelble, 2012). The first type of decentralization, administrative decentralization, is a process of redistributing power from a central authority to local governments, and refers to a "set of policies that transfer the administration and delivery of social services, such as education, health, social welfare, or housing to sub-national governments" (Siddle & Koelble, 2012, p. 20) and delegates decision-making to a local level (Yusoff, Sarjoon, & Hassan, 2016). Manor (1999, p. 5) describes it as "the dispersal of agents of higher levels of government into lower level arenas." Administrative decentralization can be measured as an actual level of authority, power, and decision-making in the hands of local governments (Goel, Mazhar, Nelson, & Ram, 2017).

Administrative decentralization brings a range of positive changes. Firstly, the level of public participation is expected to grow because of administrative decentralization. This can be

attributed to a reduced distance between a local government and the population compared to the same for the central government. Secondly, the well-being of the general population and perceptions of local governments tend to enhance the following implementation of fiscal and political decentralization. The fact that decentralized governance decision-making and policy implementations occur at the local level is important for the citizens' satisfaction (Diaz-Serrano & Rodríguez-Pose, 2012). Decentralized local governments are, also, more transparent and available to the local population. Increasing community engagement through public contributions to local decision making is essential for successful community development and the understanding of local needs and issues. As Mewes (2011, p. 40) states, the positive effects of decentralization in promoting economic development and economic efficiency require the participation of both, a local government and the population.

The effects and characteristics of administrative decentralization usually differ based on how a state government is organized, whether the decentralization occurs in a federal or unitary state. In their study, based on World Enterprise Surveys of individual business owners and managers, Goel et al. (2017) found that, in relation to administrative decentralization, unitary governments perform better than federal in areas of tax administration, business licensing, and levels of corruption. Regardless of whether the state is unitary or not, several requirements should be met in order for administrative decentralization to be successful (Bilouseac, 2015). These requirements include a) the existence of local governments that function at the lowest administrative unit level, b) the maintenance and provision of local services by the local administrations, c) the presence of financial resources that are adequate to cover the expenditures of the local government administration and the provision of services to the population, d) the

election of local officials by local constituencies, and e) supremacy of the national government over the laws of local authorities, or what Bilouseac calls “guardianship control”.

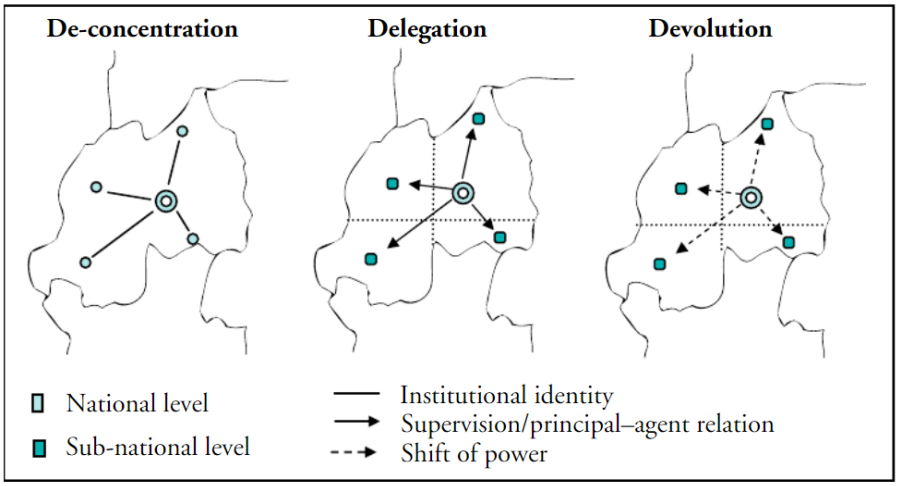

Figure 1: De-concentration, delegation and devolution distinctions

Source: Wahiu, Hedling, & Böckenförde, 2011, p. 19.

On its own administrative decentralization can take three forms: devolution, delegation, and de-concentration (Figure 1). Devolution, recognized as the strongest form of decentralization, creates a complete transfer of authority, decision-making processes, and finances from the central government to lower tiers “through an electoral process which makes local governance units directly accountable to local people” (Yusoff et al., 2016, p. 58).

Delegation features the transfer of power from central to local governments or semi-autonomous organizations that are accountable to the central government. Some examples of such organizations can be boards, corporations, semi-autonomous school districts, or any agencies that are responsible for specific functions (Yusoff et al., 2016). The principal-agent relationship is created within the delegation form of decentralization where “the central government acting as principal and the local institution acting as agent” (Wahiu et al., 2011, p.

20). This form of administrative decentralization provides less freedom of decision-making than devolution.

De-concentration features a shift of responsibilities of policy implementation from the central government to local bodies while decision-making authority remains at the center. De-concentration as a form of administrative decentralization is more common for unitary states (Yusoff et al., 2016). Manor (1999) describes de-concentration as a form of decentralization that occurs without simultaneous democratization and can be defined as when:

> agents of higher levels of government move into lower level arenas but remain accountable only to persons higher up in the system-it enables central authority to penetrate more effectively into those arenas without increasing the influence of organized interests at those levels. The central government is not giving up any authority. It is simply relocating its officers at different levels or points in the national territory. In such circumstances, it tends in practice to constitute centralization, since it enhances the leverage of those at the apex of the system (Manor, 1999, p. 5).

This form of decentralization does not, in fact, create a tier government system and therefore, does not transfer authority to lower levels of government as in delegation or devolution processes (Wahiu et al., 2011).

Political decentralization refers to the dispersal of political authority and/or electoral capacities from a central government to lower level actors (Siddle & Koelble, 2012, p. 21). Manor (1999, p. 5), leaving space for interpretation, defines it as a "transfer of resources and power (and often, tasks) to lower level authorities which are largely or wholly independent of higher levels of government, and which are democratic in some way and to some degree". According to Barnett, Minis, & VanSant (1997), the development of mutual relations between national and local governments and between local authorities and citizens refers to political decentralization. It represents the power of local authorities to develop and implement electoral policies, spread democratic processes to lower government levels, and ensure the sustainability of democracy. Political decentralization empowers citizens to elect local-level officials and

representatives of the local government. In other words, political decentralization represents the degree to which lower levels of government can perform political functions (Wahiu et al., 2011).

Finally, fiscal decentralization is defined by Manor (1999) as a transfer of influence, financial decision rights, and fiscal authority from higher levels of government to lower levels. Fiscal decentralization is generally measured as "the size of local tax revenues and expenditures relative to the national tax revenues and expenditures, i.e. it is a measure of how much decision making is decentralized to the local governments" (Hanes & Wikström, 2010, p. 60). Although some studies share the view that fiscal decentralization is not a separate type of decentralization but an element that takes place on the cross section of both political and administrative decentralization (Crawford & Hartmann, 2008), financial autonomy of local authorities assures the ability of local governments to perform their assigned tasks without weakening or making decentralization ineffective (Yusoff et al., 2016).

The creation of a healthy and balanced fiscally decentralized vertical system is an important but complex and complicated task in developing countries. As Oates (1999) mentions, in developing countries, local governments usually have restricted access to the tax and revenues from their localities and often heavily rely on financial transfers from high-level or central governments. This dependency on allocations from above may result in a switch from satisfying local needs and making accountable financial decisions on the local level to favoring the wishes of central authorities. For the successful creation of effective local revenue systems, Oates (1999) suggests the achieving of three main objectives:

1) Restructure intergovernmental grant systems in a way that they provide less financial support to the decentralized governments and "remove the perverse incentives that they often embody for fiscal behavior on the part of recipients"(Oates, 1999, p. 1144);

2) Reduce dependence of the decentralized governments on transfers from the central government by changing the revenue system so that local governments are able to finance their own budgets by having better access to the local tax revenues;
3) Revise the use and limitations of debt financing to guarantee that debt practices are not used to finance the current account deficits.

Although the importance of the independent local budgets is stressed, Oates (1999) acknowledges that depending on the circumstances and financial stability of individual communities, central transfers may still be necessary. To balance the authority of revenue collection and spending between regional and local governments, a state should follow two principles: 1) the amount of assigned to the regional or local level governments revenues should be sufficient to ensure proper financing of public services offered locally and in the benefit of local residents; and 2) collection of sub-national revenue paid by local residents regarding local services should be assigned to the local governments (Wahiu et al., 2011).

All three types of decentralization can exist and occur in a government at the same time, as well as in isolation. In some cases, it is hard to clearly distinguish one type of decentralization from another. Successful and effective decentralization of authorities and power requires the presence of all three types of decentralization (Manor, 1999; Wahiu et al., 2011). To have any promise of success "[political] decentralization must be accompanied both by some fiscal decentralization (because it supplies financial resources) and by some […] administrative decentralization (because it supplies bureaucratic resources required for implementation)" (Manor, 1999, p. 7).

Decentralization theory and public services

Decentralization of the government leads to changes in local governance, provision of public services, and public participation in decision-making. Below we discuss different aspects of the decentralization processes.

Decentralization and improvement of services according to the local needs

According to the theory, decentralization tends to improve local service provision by bringing the government closer to people. As Faguet (2014) notes, citing Wallis and Oates (1988), decentralization forces local governments to become more receptive to local needs. He illustrates this effect of decentralization by comparing centralized and decentralized systems. His study looks at the focus of local governments in each system. As a rule of thumb, in a centralized system, local government officials are usually appointed by higher-level authorities. Hence, they will be rather focused on pleasing officials of higher rank, that have authority over their political careers and standing, than local constituencies. On the other hand, municipal authorities in decentralized systems are elected by local citizens, so the government attention goes towards satisfying the needs of the local population. “Local” officials become local officials, whose tenure and career prospects are in the hands of the citizens they serve, who elect them” (Faguet, 2014, p. 7). Additionally in order to satisfy local population recently decentralized governments tend to concentrate on policies that “are highly visible and quicker to achieve over policies that are less visible and take longer to achieve” (Cordeiro Guerra & Lastra-Anadón, 2019, p. 15).

However, the empirical evidence shows inconsistent results of the effects of decentralization on the public services access and quality. As Faguet & Sánchez (2008) mention, from 24 articles published in World Development between 1997 and 2008 regarding decentralization, local governance, and responsiveness to the local needs, 11 found positive

outcomes while 13 reported negative. According to Freinkman (2010), fiscal decentralization measured as a share of local expenditures financed from local revenues has positive results on the reliability of utilities and the quality of provision in many regions in Russia. The results show that with an increase of one percentage point in the share of collected local revenues of municipal expenditures the number of breakdowns in utility networks reduces by 3-4 percent. In China Chen, Huang, & Li (2017) found that the level of public satisfaction with social services rises with fiscal decentralization. Interestingly, satisfaction with services significantly increases among the elderly, poor, and sick. On the other hand, Akin, Hutchinson, & Strumpf (2005) found that the provision of public goods related to health care from local government health budgets in Uganda was declining during the 1990s. This decline became more significant as the level of decentralization and local governments autonomy of decision-making were increasing. This study revealed the necessity for monitoring the lower levels of government in terms of expenditures and allocations of budgets following decentralization.

Several studies investigated the effects of decentralization of education. The study conducted by Cordeiro Guerra & Lastra-Anadón (2019) shows that decentralization of education in high-income OECD countries results in negative outcomes in quality indicators but has positive results in access to education. Consistent with the results in OECD countries, Faguet & Sánchez (2014) found improvement in access to education measured as enrollment rates in Colombia. Also, access to education for the poor significantly improved due to increases in local government spending on education services after decentralization. A study in Argentina (Galiani, Gertler, & Schargrodsky, 2008) also found positive effects between decentralization of the education system and the quality of education as measured by students test scores. However, even with the overall improvement in the quality of services due to decision-making processes

occurring at a local level, this study shows that only rich but not poor communities benefit from decentralizing services.

Another strand of the literature focuses on the effects of decentralization in the quality and provision of health services. Several studies on infant mortality rates (Cavalieri & Ferrante, 2016; Jiménez-Rubio, 2011; Kudamatsu, 2012) found positive impacts of decentralization on infant mortality. The effect of decentralization, however, depends on the level of autonomy in sources of income transferred to local authorities and the proportion of tax revenues collected and controlled by local governments. Besides decentralization, the share of health expenditure on GDP and level of education were also found to be statistically significant in the reduction of infant mortality (Jiménez-Rubio, 2011). A 2017 study by Jiménez-Rubio & García-Gómez of health care changes in Spain due to decentralization indicates that improvements in health are found in regions that are not just politically but also fiscally decentralized. These findings indicate that fiscal autonomy in decision-making at the local level has an impact on the effects of decentralization policies. Contradictory to the results in Jiménez-Rubio & García-Gómez research, another study, analyzing public satisfaction with health services, found no impact of decentralization on the change in satisfaction (Antón, Muñoz de Bustillo, Fernández Macías, & Rivera, 2014). According to Khaleghian (2004), the effects of decentralization on local public services are mixed and dependent upon a country's income level. Low-income decentralized countries experience advances compared to centralized government systems in health services, as measured by the childhood immunization coverage rates. Middle-income countries have the opposite effect and show lower coverage rates for decentralized government systems.

The study of the effects of public services quality and availability on the quality of life (Cuadrado-Ballesteros, García-Sánchez, & Prado-Lorenzo, 2012) shows that the quality of life

for the measured population depends on whether public or private companies provide the services. Public companies are better in providing public transportation, health care, and trade services while outsourced private companies provide better quality for water services and waste collection. One of the possible reasons of decentralized governments to separate some responsibilities between public and private service providers is that "local governments may be faced with too many responsibilities transferred from the national administration, and consequently they are forced to resort to the private sector for assistance" (Cuadrado-Ballesteros et al., 2012, pp. 77–78). Without this separation, the provision of services would probably decline.

Considering the empirical results discussed above, we hypothesize that decentralization policies that result in an increase of the local government responsiveness to the local needs, a high level of fiscal autonomy, and a decision-making process to be closer to people lead to the improvement of the community satisfaction with public services.

Hypothesis 1: decentralization leads to an improvement in the quality of public services.

Also, in order to satisfy local constituencies, governments tend to focus on policies that produce the most results in a short time. Thus,

Hypothesis 2: decentralization of democratic governments leads to a greater focus on public services that can demonstrate immediate improvements, (e.g. road infrastructure, public parks, etc.) than those that show impacts in the long term (e.g. cultural and sport facilities, medical institutions, etc.).

Decentralization and local economy

Fiscal decentralization tends to lead to an increase of government expenditures and, in case of greater decentralization and small sizes of governments bodies, to a “loss of certain

"economies of scale" with a consequent increase in costs of administration" (Oates, 1985, p. 749). In the second half of the 20th century, governments have recognized this negative economic effect, and there have been several territorial reforms featuring decentralization of the central government followed by an amalgamation of municipalities that are too small to be administratively and economically efficient. Examples of such reforms can be found in Canada (Slack & Bird, 2013), Israel (Reingewertz, 2012), Scandinavian countries (Blom-Hansen, 2010; Hanes & Wikström, 2008, 2010; Nelson, 1992) and Western Europe (Allers & Geertsema, 2014; Tavares, 2018).

The most common argument in favor of larger municipal bodies and municipal amalgamations is that larger territorial units are more economically efficient, can provide better public services with lower prices due to economies of scale and, overall, are more stronger and sustainable (Blom-Hansen, 2010, p. 51; Hanes & Wikström, 2010; Slack & Bird, 2013; Tavares, 2018). However, some argue that bigger consolidated municipalities are not, in fact, as economically efficient. As Nelson (1992) mentions "[…] the conventional wisdom that consolidated units of local government are inherently superior to a more fragmented structure has been met with ever-increasing skepticism by local government analysts" (Nelson, 1992, p. 50). Bish (2001) argues that the size of the government does not determine the cost of services. Both small and large municipalities can be economically efficient. Smaller municipalities can have low per capita cost of public services if they rely on contracts and partnerships with larger bodies or organizations where those services are economies of scale. Simultaneously, this kind of cooperation also benefits larger local governments when they provide services for smaller communities.

An empirical study of municipal amalgamation in Israel shows that amalgamation of communities led to a decrease of municipal spending of about 9%, while the quality level of public services remains the same (Reingewertz, 2012). The amalgamation of the city of Toronto, Canada with its surrounding regions (Slack & Bird, 2013), resulted in an increase of household expenditures for public services, and a reduction of public access and participation in local decision-making processes. Positive results such as an increase of financial abilities are observed for smaller and poorer municipalities that were included in a newly amalgamated city. Also, amalgamation resulted in the equalization of the levels of services for all residents within the boundaries of the newly created municipality around the city of Toronto.

Thus, according to the economies of scale theory and empirical results we expect to have a positive relationship between the public satisfaction with local public services and the size of the community measured as the total population:

Hypothesis 3: larger communities are more likely to have better public services due to economies of scale than smaller communities.

Decentralization, diversity, and urbanization

Decentralized governments tend to be more successful in implementing policies according to the needs of diverse populations and preferences of minority groups. Thus, a decentralized system provides more flexibility in accommodating the desires of a heterogeneous population. The reasons for decentralization to successfully address heterogeneous community needs as well as reduce ethnic conflicts and separatism may be in placating the needs of minority groups through “bringing the government closer to the people and increasing opportunities to participate in government” (Brancati, 2006, p. 651).

Empirical studies show inconsistent results. Alesina, Baqir, & Easterley (1999) found a positive relationship between the ethnic diversity of communities and the financing of public goods in the US. According to the study, ethnically heterogeneous jurisdictions show higher spending on core public goods, while the share of expenditure for these goods from local budgets remains lower than in ethnically homogeneous jurisdictions. Even though a high level of allocations for public goods such as schools, roads or public transportation in diverse regions is funded due to intergovernmental transfers rather than from revenue budgets, better financing should lead to an increase in the quality of services. Similarly, another study found a positive relationship between decentralization, the delivery of public services and an increase of heterogeneity of regional preferences (Besley & Coate, 2003).

On the other hand, according to the study in Cote d'Ivoire (Sanogo, 2019), more homogeneous and less urbanized communities tend to benefit more from decentralization policies. Sanogo found that fiscal decentralization policies resulted in an increase of access to public services and reduction of poverty. The results show that less diverse and more urban municipalities are more likely to have improved access to public services. Among different public services that include education, health, water and sanitation services, the main enhancement is found to be in an increase in access to education. Due to contradictions in the empirical results, in this study, we will also test the effect of diversity and urbanization on the quality of services. Thus,

Hypothesis 4: municipalities with less diverse demographics are more likely to have better public services than the diverse ones.

Hypothesis 5: more urbanized municipalities are more likely to have better public services than less urbanized communities.

Therefore, we hypothesize that decentralization leads to better public services provided locally. These improvements are possible due to a range of reasons. Firstly, local governments are more responsive than the central government to specific local needs of the population. Secondly, decentralized governments are more successful than centralized governments in addressing the needs of a heterogeneous population. This is due to more local decision-making processes, promotion of public engagement and participation that allows governments to recognize and address the needs of the diverse population within communities. Finally, a decentralized system makes local government bodies more accountable in improving local public services and satisfying the needs of the voters by giving electoral power to constituencies. To test the hypotheses, we will use Ukraine that recently adopted a decentralization reform as a case study.

CHAPTER 3. DECENTRALIZATION REFORM IN UKRAINE

Background of the decentralization reform in Ukraine

Over the last 5 years, from 2014 to 2019, Ukrainian local governments faced important changes in their administrative, financial, and political systems. The authority, funds, tax revenues, and responsibilities of central government agencies are being decentralized to the local governments. This devolution of power benefits cities of regional significance and amalgamated communities. Oblasts shifted their powers to the cities of regional significance, defined as economic and cultural centers with a population greater than 50,000 and developed industry. Amalgamated communities now combine powers and resources by merging together. These combined communities can create new relationships with rayouns, as well as establish direct fiscal relationships with the central government (Levitas & Djikic, 2017). Decentralization reform shows positive economic results, improvement of public services and in the administrative system of relationships between the governments of different levels.

The beginning of the decentralization reform in Ukraine is associated with the approval of *The Concept of the reform of local self-government and the territorial organization of power in Ukraine* (hereinafter referred to as the Concept), the document that revealed the necessity for the decentralization reform. The Concept provided the first steps towards decentralization and was adopted by the Cabinet of Ministers on April 1, 2014 (International Alert/Ukrainian Center for Independent Political Research, 2017). The Concept acknowledges that The European Charter of Local Self-Government (The Chapter), that assures the political, administrative and financial independence of local authorities and establishes the principle of local self-government, has been ratified by Ukraine since 1997. However, the current Ukrainian legislation does not allow the system of local self-government to work effectively in a way that meets the needs of

modern society. Due to ineffective laws regarding administrative, fiscal and political systems, as well as the country's unstable economy, local governments are limited in providing high quality administrative, public, and utility services for the whole population. Based on previously analyzed issues within the country, the Concept aims to create a mechanism and a time-frame for establishing an effective self-government system and administrative-territorial division that will likely provide Ukrainian society with democracy, high-quality services, and support of a healthy leaving environment.

To implement the decentralization reform based on the Concept two steps shall be followed. The first step, planned to be implemented by the end of 2014, is concentrated on updating the legislation, while the second one, planned for the period 2015-2017, discusses mechanisms for the implementation of the decentralized system on a local level and amalgamation of communities. The initial step emphasizes the importance of adopting the Amendments to the Constitution that will provide a legal basis for a newly introduced administrative-territorial unit, amalgamated territorial community (ATC) or 'hromada', and solve jurisdictional conflicts due to the integration of ATCs and overlapping government bodies at different levels. Also, the Concept envisages the adoption of legislation that outlines a range of changes that will ensure democratic decision-making processes at a local level, public participation, and delineate the proper powers and rights of local governments as they are stated in the Constitution. The unification of public services, local elections, and community and regional planning processes were planned to take place during the following step. Both steps should establish a legal and practical basis for the decentralization reform and its implementation.

As it was discussed above, the decentralization reform should begin with the passing of proposed Amendments to the Constitution. These amendments would establish an administratively and politically decentralized self-governing system. According to the Amendments, a new administrative-territorial structure should represent a three-tier system that includes the regions (‘oblasts' and the Autonomous Republic of Crimea), the districts, and the communities. The lowest tier that is represented by local governmental bodies, the community, includes cities, towns, and villages as well as communities that amalgamated on a volunteer basis. However, the Draft Law “On the Principles of the Administrative-Territorial System of Ukraine” that was supposed to be adopted by the end of 2014 has not passed final approval by the Verkhovna Rada of Ukraine (Rada), the unicameral parliament of Ukraine. The Draft Law was defined as urgent by the President, revised by the Verkhovna Rada Committee on Legal Policy and Justice, approved by The Constitutional Court of Ukraine, and finally pre-approved by the Rada. Regardless, the document is still pending review. The pre-approval of the document was followed by massive protests outside of the Parliament building, during which four soldiers of The National Guard of Ukraine died (Homenko, 2016). The central Ukrainian government’s failure to pass the Amendments made the implementation of the administrative and political sides of the decentralization reform impossible in the timeframe established by the proposed Concept.

Another reason for the delays in passing the Amendments to the Constitution is the occupation of the Autonomous Republic of Crimea and the military conflict in the Donbass region that includes Donetsk and Luhansk oblasts (Figure 2). Interestingly, the commencement of the decentralization reform overlapped with the beginning of the military conflict in Ukraine. March 27th, 2014 is designated as the official day of the Russian occupation of Crimea as it is

stated in United Nations General Assembly Resolution 68/262. As was stated earlier, *The Concept of the reform of local self-government and the territorial organization of power in Ukraine* was approved a few days later on April 1st. Almost simultaneously conflict emerged and engulfed the eastern part of Ukraine that spring. Pro-Russian separatists occupied parts of Donetsk and Lugansk oblasts and have caused widespread physical and social destruction of urban environments throughout the region. Correctly or incorrectly, the decentralization reform became associated with the Minsk[1] process (International Alert/Ukrainian Center for Independent Political Research, 2017, p. 4), an attempt at peace, in which Kremlin requested the introduction of a federal system in Ukraine ("Full text of the Minsk agreement," 2015). In the light of the Minsk agreement, the parliamentary opposition pointed out a possible negative outcome in the approval of the Amendments, which would give the Donbass region a "special status" that might provoke the region to further separation from Ukraine. However, this reading of the document, according to the Prime Minister of Ukraine Volodymyr Groysman, is misleading and no special status is mentioned or discussed in the Amendments. Instead, some areas of Donetsk and Lugansk oblasts that are not under control of the Ukrainian government will be given specific regulations of local governing that promote successful integration and redevelopment of the region after its liberation ("Якщо особливості місцевого

[1] As a result of a summit on February 11th, 2015, in Minsk, the leaders of Ukraine, Russia, France, and Germany came to an agreement on a Package of Measures that are supposed to mitigate and eliminate the conflict in the Eastern part of Ukraine. The agreement includes 13 Measures.

Paragraph 11 of the agreement states that Ukraine shall carry out decentralization reform that should be reflected in the Amendments to the Constitution that should include "a reference to the specificities of certain areas in the Donetsk and Luhansk regions, agreed with the representatives of these areas". Paragraphs 4, 9 and 12 discuss the Law of Ukraine "On interim local self-government order in certain areas of the Donetsk and Luhansk regions", a timeline for specifying the area that is included into the zone of the special regime, local elections and election rules in certain areas of the Donetsk and Lugansk regions.

самоврядування дадуть можливість реінтегрувати Донбас, то чому цього не може бути в Конституції України?," 2015).

Figure 2: Oblasts of Ukraine and non-government-controlled territories

Source: The Verhovna Rada of Ukraine, Administrative territorial-structure of Ukraine, 2019.
Note: Non-government-controlled areas as of March 23rd, 2018. Source: The Ministry of Defence of Ukraine

Regardless of the importance of approving the Amendments to the Constitution or the importance of the meeting the requirements of the Minsk agreements, the adoption process has stagnated. At this time, the reform is being implemented through changes to the current legislature by adopting a range of laws that establish decentralized government systems under the current Constitution. The main advancements made towards the reform include the launch of the administrative-territorial reform and volunteer amalgamation of communities, implementation of the fiscal reform, and delegation of power to provide public services to the

local governments, the lowest levels of administrative units. Nevertheless, a constitutional amendment is still required.

Administrative-territorial division of Ukraine

The administrative-territorial division in Ukraine is significantly fragmented, with a prevailing number of small rural communities all around the county that are disconnected from government administration and services. Because small rural communities were recognized to be economically inefficient and incapable of providing high-quality public services for the citizens, one of the focuses of the decentralization reform became the promotion of voluntary community amalgamations. As of March 1st, 2015, before the start of community amalgamations, the territory of Ukraine had the following structure. The country was divided into 27 regions including 24 oblasts, the Autonomous Republic of Crimea, and two cities – Kyiv and Sevastopol. Each region consists of districts or 'rayouns' and at that point totaled 490 districts across all of the regions of Ukraine. Districts are made up of cities, towns, and villages. In March 2015 there were 29,733 individual communities in Ukraine, from which only 1345 are considered urban types of communities - cities or towns (The Verkhovna Rada of Ukraine, 2015).

As can be seen from Table 1, as a result of the decentralization reform, 8,784 urban and rural communities amalgamated voluntarily and created 714 newly merged communities, as of February 1st, 2019 (The Verkhovna Rada of Ukraine, 2019). Based on these numbers, the fragmentation of Ukrainian communities has shrunk by 27.14%. Figure 3 shows 704 of those communities that were established and held their first local elections over the four-year period from 2015 to 2018. This information was received from the Ministry of Regional Development, Building and Housing and Communal Services of Ukraine.

Table 1: Number of communities

	Mar-15	Feb-19
Number of amalgamated communities	0	714
Number of communities that participated in amalgamation	0	8,784
Number of communities in the county	29,733	29,720
Number of communities considering AC instead of separated communities	29,733	21,650
% by which the number of adm-territorial units shrunk compared to the number of communities in March 2015		27.20%
Source: The Verkhovna Rada of Ukraine, 2019		

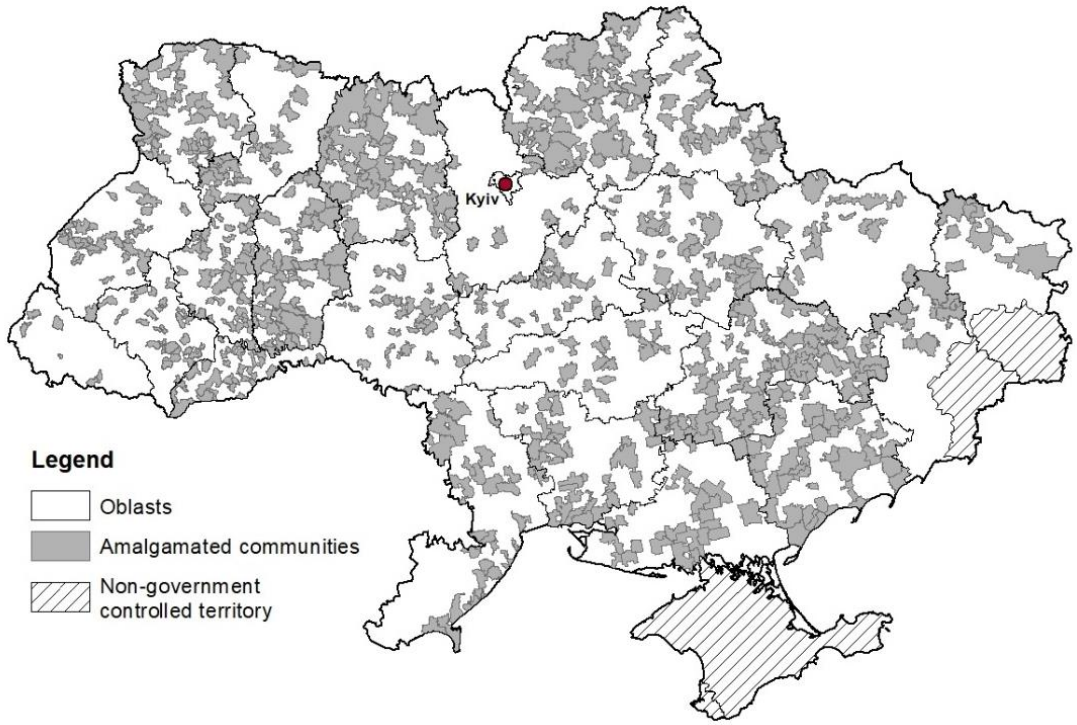

Figure 3: Amalgamated communities that were established and held their first local elections over the four-year period from 2015 to 2018

Source: Ministry of Regional Development, Building and Housing and Communal Services of Ukraine

Amalgamated communities receive several benefits from the merger. These can be an increasing size which allows for the establishment of economies of scale, more direct relationships with the central government budget, higher amounts of taxes and charges in local

budgets, and, additionally, subventions from the central government for infrastructure and community development.

In April 2018 the Verkhovna Rada approved a law that provides the cities of regional significance, the communities that are economic and cultural centers, a simplified procedure of voluntary amalgamation with surrounding town and villages (Palchuk, 2018). The cities of regional significance are recognized by the law as capable amalgamated territorial communities. The important role of such cities as cultural, economic and development centers should give a boost to the surrounding communities if they are willing to merge. The amalgamation of communities of different sizes has great potential for successful development of smaller communities in the future. A study on amalgamation reform of 1952 in Sweden by Hanes & Wikström (2008) supports the merger of communities of different sizes. Their findings regarding heterogeneity of population size suggest that amalgamation of heterogeneously populated municipalities is a better strategy for population growth than the amalgamation of communities of equal size. Hanes & Wikström (2008) propose that this might be because consolidation of communities of different sizes creates a municipality center in the biggest community, where it might be easier to concentrate most of the resources and services. They also suppose that improved by amalgamation, the delivery of local public services might influence growth. Another study of the amalgamation of Toronto with its surrounding regions (Slack & Bird, 2013) shows that amalgamation of a highly developed area with small surrounding communities leads to the unification and equality of the quality of services provided within the merged municipality. Thus, the adoption of the new law in Ukraine is expected to provide positive results for the decentralization process and increase the number of volunteer amalgamations with cities of regional significance among the country.

Fiscal decentralization

Fiscal decentralization reform also introduced changes in the legislature and has been showing positive results. One of the first changes in the legislation were changes in the Budget and Tax Codes of Ukraine that fiscally decentralized all communities and “established a direct relationship between the newly amalgamated communities and the state budget” (Yesmukhanova, 2018, p. 9). The Law of Ukraine "On Amendments to the Tax Code of Ukraine and Certain Legislative Acts of Ukraine on Tax Reform" and The Law of Ukraine "On Amendments to the Budget Code of Ukraine on the Reform of Intergovernmental Fiscal Relations" were adopted on December 28th of 2014. After the changes, local governments gained full rights to allocate the funds according to the local needs. The modernized Budget and Tax Codes granted to the lowest levels of governments rights to collect their own revenues directly at a local level. Table 2 shows the amount of main taxes and charges to be transferred to the local budgets according to the updated legislature. The modernized Budget and Tax Codes grants the rights to collect their own revenues to the lowest levels of governments directly at a local level. Table 2 shows the amount of main taxes and charges to be transferred to the local budgets according to the updated legislature. As can be seen, the cities of regional significance receive as well as amalgamated communities receive 60% of personal income taxes that are collected within the jurisdictions of the cities. Except for the private enterprise income tax, rental change and payments for the use of natural resources, which are collected by the regional and the state budgets, and pollution tax, that is collected by the cities of regional significance in the amount of 25%, the rest of the taxes is transferred directly to the local budgets in full amount. Moreover, we can see that the right to collect 60% of the personal income tax is an additional incentive for the communities to amalgamate because only cities of regional significance and amalgamated communities can collect personal income taxes. Otherwise, if communities are not amalgamated,

Table 2: Required amount of main taxes and charges to be transferred to local budgets, (% of taxes collected within the jurisdictions of the following municipalities)

Taxes and charges	Regional budgets	Cities of regional significance, amalgamated communities	District budgets	Villages, settlements, towns of district significance
Personal income tax	15	60	60	
Private enterprise income tax	10			
Rental charge for the use of water and forest resources/subsoil use for extraction of national minerals	50/25			
Payment for the use of other natural resources	100			
Rental charge for special use of natural and subsoil resources of local significance		100		100
Income tax for municipal enterprises and financial institutions	100	100	100	100
Charge for the grant of specific licenses and certificates	100			
Administrative charge for state registration of entities and persons		100	100	
Charge for other administrative services		100		100
Administrative charge for state registration of real estate rights and encumbrances		100	100	100
State duty which belongs to the relevant budgets (at the place of carrying out the activity and issuing the documents)		100		100
Excise tax from retail sale (tobacco, alcohol, oil products)		100		100
Rental of property complexes and other property	100	100	100	100
Local taxes: single tax; property tax (land fee, real estate tax, transport tax)		100		100
Local charges: tourist and parking		100		100
Administrative fines and other penalties		100		100
Pollution tax	55	25		25

Source: Cabinet of Ministers of Ukraine. Ministry of Regional Development, Construction, Housing and Communal Services of Ukraine, 2017. *Fiscal decentralization in Ukraine: First successes*.

Note: The percentages reflect the amount of taxes collected on the territories that shall be paid to the budgets of those territories.

60% of personal income tax collected within those communities is received by the district budgets. The updated tax allocation system, that establishes direct inter-budget relations with the state budget, also contributes to the growth of the local budgets. According to the Ministry of Regional Development, Building and Housing and Communal Services of Ukraine, the total cumulative revenues of the local budgets since the fiscal decentralization reform have grown significantly. Based on the forecast for 2019 local budgets will receive almost four times more funds that they had in 2014 at the beginning of the reform (Figure 4). According to Yanina Kazyuk, financial decentralization coordinator, these substantial improvements of the local budgets are possible due to “expansion of powers and an increase of the interest of local self-government bodies in increasing revenues to local budgets, implementation of measures to draw resources for their filling and improving the efficiency of administration of taxes and fees" (“Фінансова децентралізація: експерти розповіли про результати 2018 року та перспективи 2019,” 2019).

According to Levitas & Djikic (2017), cities of regional significance benefit most from the fiscal decentralization reform. Although the share of their own revenues collected locally compose only 17 percent of the budgets, their total revenues increased by 14 percent. Levitas & Djikic explain this improvement due to the changes of the tax and charges collection and transfer to local budgets as well as due to transfers from the central government for the health and education sectors for which cities of regional significances expended their responsibilities. Fiscal decentralization also provides more opportunities for the smaller communities that amalgamated. The growth rate of the local budgets of the amalgamated communities tends to be higher compared to non-amalgamated municipalities. Interestingly, the bulk part of the local budgets comes from the income tax which in 2018 accounted for 59% of the total revenues of the

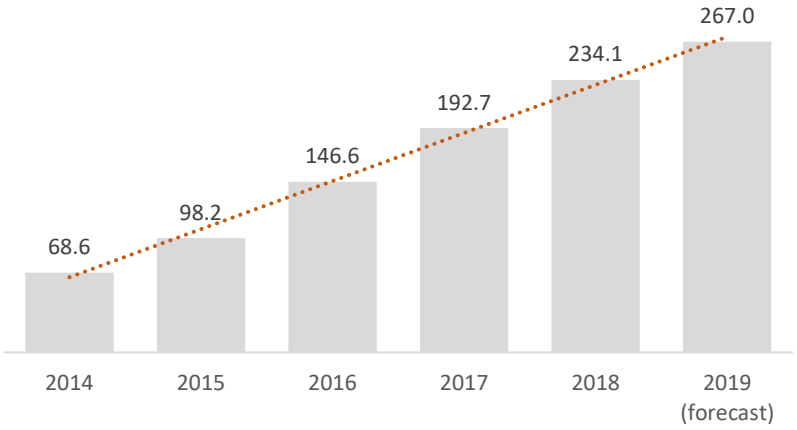

Figure 4: Cumulative revenues of the local budgets, (bn Ukrainian hryvnias)

Source: Monitoring the Process of Decentralization of The Power and Reform of Local Government as of January 10, 2019. Ministry of Regional Development, Building and Housing and Communal Services of Ukraine, 2019

amalgamated communities ("Фінансова децентралізація: експерти розповіли про результати 2018 року та перспективи 2019," 2019). In addition to the increase of the local budgets, the central government grants subventions for amalgamated communities for the community and local infrastructure development. There are also transfers for improvements in health care and education systems.

Changes in service delivery

Due to the decentralization of power amalgamated communities and cities of oblast significance are responsible for providing primary and secondary education, healthcare services, housing, utilities, and the construction and maintenance of roads and infrastructure. Since 2017 to their responsibilities were added local economic development, planning, and public safety (Yesmukhanova, 2018). This is a much larger list of the authorities than were previously granted to the local governments. Now capable communities can allocate any funds from their local budgets towards the needs of each service. Moreover, due to the decentralization reform sectoral

ministries were authorized to allocate and transfer to local authorities subsidy funds for development of education as well as health systems. Now the local governments have a better chance to recognize the most urgent local needs and properly distribute resources towards them. While there are no significant legislative changes in the provision of utilities and infrastructure maintenance, healthcare and education systems are under administrative restructure.

Based on the *Report of Successfulness of Amalgamation of Territorial Communities* prepared by Swiss-Ukrainian Decentralization Support Project (DESPRO), ASK Reform, and Association of Amalgamated Territorial Communities, the results of the decentralization reform are positively rated by the heads of the amalgamated communities. The biggest improvements for Ukrainian communities since the beginning of the reform are in areas of urban environment and infrastructure, green spaces, street lighting, and the operation of educational and cultural institutions. Less frequent the heads mentioned the improvements in healthcare services and public transportation. Communities, first, have made improvements to the following issue areas: repair of the roads and sidewalks, the operation of schools and kindergartens, provision of utilities, and street lighting. Among the biggest problems with the reform were named the inconsistencies with legislation, the absence of skills and practical knowledge in planning and administration, and issues in the relationships between different levels of governments.

Education

Education along with the health care system is one of the most important parts of the decentralization reform. According to the Kennan Institute, as of May 2018 local governments, amalgamated communities and cities of regional significance were responsible for the management of 37.3 percent of all public schools. The rest remains under the authority of ‘rayouns’, district governments, that are accountable to the central government (Rabinovych,

Levitas, & Umland, 2018). The changes to education also include the establishment of the "hub school" system. As of March 2018, 519 schools, located in the regional urban centers across the country, became hub schools. They are responsible for the guidance and supervision of 976 branch schools located in smaller communities. They also own specific equipment, provide expertise and receive additional funds from the central government (Rabinovych et al., 2018). Nevertheless, the biggest challenges in improving the quality of education endure small rural communities "where a shortage of human capital coincides with an over-abundance of tiny schools with very small classes, often counting fewer than 10 pupils per classroom" (Rabinovych et al., 2018, p. 4). Enlarging the schools in rural areas through an amalgamation of the communities should, hopefully, provide better financing, more human capital, and lead to an increase in the quality of education.

Healthcare system

Decentralization reform is expected to improve the quality of the healthcare system in Ukraine. In October 2017 several changes were adopted to the healthcare system. The Verkhovna Rada passed a new law that presents a health insurance system that gives patients the right to choose medical institutions and specialized medical professionals they prefer. Positive results of this reform are expected by 2020. According to the new legislation, the healthcare providers will receive payments for the operation costs directly from the central government based on the provided services instead of the number of beds as it was previously (Yesmukhanova, 2018). The reform also includes the rearrangement of the hospital districts through the merging of existing networks. The new system is expected to provide "more rational division of primary and secondary services across facilities, leading to higher-quality care" (Rabinovych et al., 2018, p. 4). Although the reform aims to improve the quality of services, the

lack of human capital in rural areas remains one of the greatest challenges of the healthcare system as well as education.

Limitations that affect the decentralization reform

There are other factors that might influence the success of the change in the quality of the services and utilities provided on the local level. One factor is a little experience of the communities in planning and development, responsibilities that became local under the decentralization reform. Another factor is that the level of public participation in the decision-making process remains very low. According to the results of the Ukrainian Municipal Survey in 2015 over 90% of the respondents from 22 cities have never participated in the city council meetings, executive committee of the City Council meetings (except in Khmenlinstkiy where 87%, have never participated in the executive committee meetings), or regional council meetings. As we know from the literature an improvement in the quality of life and local public services occurs when the government addresses the needs of the population. However, with a low level of participation in the decision-making a local government has little chances to learn about local needs. This low level of participation is probably due to the absence of the experience of participation in the local governance previously and a common belief that even though the population speaks up about their needs the government would not address the issues. As the study by Hutcheson & Korosteleva (2006) show people in post-soviet regions have low participation level because they lost interest in politics. This lack of interest in civic affairs and political apathy takes its beginning in the Soviet regime when the central government had superior power over the decision making and the voices of the citizens had little impact. After the beginning of the decentralization reform, the building of trust between citizens and local

governments became one of the most important steps towards the reform's successful implementation.

Summary

Thus, although the important for the successful implementation of the decentralization reform Amendments to the Constitution are still pending approval, the reform is carried through the changes in the legislature. Changes that already took place show positive results. The sizes of the local budgets almost quadrupled since 2014 and continue to grow. Local governments gained more power and authorities to address local issues. Governments of the amalgamated communities and the cities of regional significance are responsible for providing primary and secondary education, healthcare services, housing, utilities, and the construction and maintenance of roads and infrastructure. Since 2017 to their responsibilities were added local economic development, planning, and public safety. Due to the decentralization reform, sectoral ministries were authorized to allocate and transfer to local authorities subsidy funds for the development of education as well as health systems. Reforms that are carried in healthcare and education systems are expected to bring positive results by 2020. The complications with the reform include the inconsistencies with legislation, the absence of skills and practical knowledge in planning and administration, and issues in the relationships between different levels of governments.

CHAPTER 4. ANALYSIS AND DISCUSSION

Data and Methodology

Data

In this section, we empirically analyze the impact of the decentralization policies in Ukraine on the quality of local public goods, services, and utilities in cities of regional significance. We are expecting to find an increase in the quality of local services and utilities, our first hypothesis. To do this we analyze how the quality of services was changing over the four-year period, which cities experienced improvements and in which services. We also account for demographic, economic, and political variables and their influence on the quality of services.

The data on the quality of the local services in major cities in Ukraine is collected from the Ukrainian Municipal Survey for years 2015, 2016, 2017 and 2018. The Ukrainian Municipal Survey was conducted by the Rating Group Ukraine on behalf of the International Republican Institute (2015, 2016) and the Center for Insights in Survey Research (2017, 2018). Through random sampling, 800 respondents at the age of 18 and older from 24 Ukrainian cities were selected and interviewed at home. The poll of the cities includes Kyiv, the capital of Ukraine, 21 oblast centers and two cities in Donbass region, Mariupol and Severodonetsk in Donetsk and Lugansk oblasts respectively. The survey did not cover the occupied territory of the Autonomous Republic of Crimea. Also, it should be noted that in 2015 the survey covered only Kyiv and 22 oblast centers excluding the two cities in the Donbass region due to the military conflict. The sample is representative of the true population and weighted by sex, age, and education using data from the State Statistics Service of Ukraine. Average response rate over the four years of the survey is 63%.

Dependent variable

Every year following the decentralization reform, the respondents were asked to rate the quality of the services and/or public goods that are available in their city on the scale from excellent (5) to terrible (1). The respondents also were given a "difficult to answer" choice. For the purposes of this study 13 goods and services were selected from the survey and grouped for further analysis. Our dependent variable is the quality of the publicly provided goods and services in each of the 24 analyzed cities, measured on a scale from one to five, with five being the highest score. The unit of analysis is a city. The responses from the All Ukrainian Municipal Survey were recalculated in order to report the quality as a score. Table 3 lists the services, groups and their abbreviations.

Table 3: Explanatory variables

Service or good	**Group**
Sidewalks Public transport	Public transportation (PubTrans)
Roads Street lighting	Road infrastructure (Roads)
Schools Kindergartens	Education (Edu)
Trash collection Sewage Water supply	Utilities (Util)
Medical institutions	Medical institutions (Med)
Cultural venues	Cultural venues (Cultural)
Sport facilities	Sport facilities (Sport)
Public parks and gardens	Public parks and gardens (Parks)

To evaluate a change in the score over time, we look at the difference between the quality of services in 2015 and 2018. The change in the quality of services between the years 2015 and 2018 is calculated as a percentage change based on the initial score. For regression models, we use the scores for each service for all four years – 2015, 2016, 2017, and 2018.

Explanatory variables

The ability of a local government to affect the quality of local public services differ across the country and depends on the number of factors. Therefore, the study establishes a model of the change in the score of the quality of public services accounting for economic, demographic, and political proxies in each city. Definitions and sources of the explanatory variables are listed in Table 4.

Table 4: Definitions and sources of the dependent and explanatory variables

Variables	Description	Source
Dependent variable		
Score of the quality of the public goods and services (SCORE)	The score of the quality of each good and service based on the rating on the scale from excellent (5) to terrible (1)	Ukrainian Municipal Surveys, years 2015-2018 http://ratinggroup.ua/en/research/ukraine/
Explanatory variables		
Index of ethnic fractionalization (EF)	An index of ethnic fractionalization (EF) that measures the probability of two individuals randomly selected from the population belong to different ethnic groups	All-Ukrainian population census. National composition of population, 2001. State Statistics Committee of Ukraine
Cost of the utilities (COST)	Utility cost for the population for water supply, trash collection and sewer for years 2015-2018	The official websites of each municipality
Gross Regional Product per capita (GRP)	Annual average market value of all goods and services produced in an oblast, obtained for years 2015-2017	State Statistics Committee of Ukraine
Urbanization (URB)	Percentage of people living in an urban area of the total population within each oblast, data for years 2015-2018	State Statistics Committee of Ukraine
The level of corruption (CORR)	The score of level of corruption of corruption in each analyzed city on the scale from a significant problem (2) to not a problem at all (-2)	Ukrainian Municipal Surveys, years 2015-2018 http://ratinggroup.ua/en/research/ukraine/
Total population (POP)	Estimates of the total population in each city, data for years 2015-2018	State Statistics Committee of Ukraine

As we know from the literature, decentralized governments are more successful than centralized authorities in implementing policies according to the needs of diverse populations

and preferences of minority groups. Even though decentralized governments account for the diversity of needs within the municipalities, we predict that less diverse municipalities will have higher improvements in service quality. Due to the lack of data at the city level, we used data at the oblast level, a bigger territorial unit, to measure diversity. Data for each city is represented by the data for an oblast in which each city is located. This is obviously a limitation on the study because it assumes that the ethnic composition of an oblast is homogeneous within its boundaries and reflects the ethnic compositions of cities within the oblast. The ethnicity data was obtained from the All-Ukrainian population census 2001 (State Statistics Committee of Ukraine, 2001) for the oblast level. We use an index of ethnic fractionalization (EF) that measures the probability of two individuals randomly selected from the population belong to different ethnic groups (Arkadiev, 2010). The higher the score the higher the ethnic fractionalization in a geographical area. It is calculated as

$$EF = 1 - \sum_{i=n}^{N} p_i^2$$

Where p_i - the proportion of an ethnic group in the total population,

N – number of ethnic groups

Due to inconsistent results from the empirical studies regarding the effects of decentralization on the quality of services, based on the sizes and economic characteristics of the communities, it is important to control for the economic variables such as the cost of utilities (COST) and Gross Regional Product (GRP) per capita. The cost of the utilities was obtained from the official websites of each municipality and represents the cost of water supply, trash collection and sewer for years 2015-2018. To reflect the economic situation in each city, we use GRP per capita data for 2015, 2016, and 2017, the most recent data provided by the State

Statistics Committee of Ukraine (see Appendix B, Figure B.2). Similar, to the measure of ethnic fragmentation, there was no data at the city level, therefore, we used the GRP per capita observations from the oblast level. Thus, the assumption that the proportions between different oblasts' GRP per capita levels reflect the relationships between cities' GRP per capita may be problematic and could affect our results. The total population of each city was obtained for each year of the 4-year period based on the estimates from the State Statistics Committee of Ukraine. For the analysis GRP per capita is calculated in thousands of hryvnas and the total population in each city is in thousands of people.

The urbanization level (URB) is calculated as a percentage of people living in an urban area of the total population within each oblast. Level of urbanization is measured on the oblast level. This indicator is important for measuring the change of satisfaction with services that have not only local but also a regional level of service, like major medical institutions that serve not just the city but also surrounding areas. Urbanization also can impact cultural and sport services. Big football stadiums, for example, that hold national league games are located predominantly in the oblasts' centers.

The level of corruption (CORR) was obtained from the Ukrainian Municipal Survey for the years 2015, 2016 and 2017. The respondents were asked to rate the seriousness of corruption in their city on the scale from a significant problem (2) to not a problem at all (-2). The respondents were also provided with the option to state "difficult to answer".

The model

We use a multiple regression model with a lagged explanatory variable to incorporate the feedback of the scores over time and test for significance of the rest of the explanatory variables in the model. We include a lagged dependent variable because we expect that the current level of

the quality of public services is determined by its past level. Thus, the analytical model (Model 1) used to determine the change of quality satisfaction with public goods and services is as follows:

$$SCORE_t = \beta_0 + \beta_1 Yr_t + \beta_2 Yr_t^2 + \beta_3 Sc_{t-1} + \beta_4 EF_t + \beta_5 POP_{bt} + \beta_6 URB_{bt} + \beta_7 COST_t + \varepsilon_t$$

Where:

Y_t - dependent variable - score of the quality of the public goods and services

Sc_{t-1} - a lagged value of a score of the quality of the public goods and services as an independent variable

t - time (year), ε_t – error

To analyze the relationships and their magnitudes between the change in the quality of the services and ethnic, economic, demographic, and political proxies in each city, we use a multiple linear regression model (Model 2) defined as follows:

$$SCORE = \beta_0 + \beta_1 EF + \beta_2 GRP + \beta_3 POP + \beta_4 URB + \beta_5 CORR + \beta_6 COST + CITY + \varepsilon$$

Where:

Y - dependent variable - score of the quality of the public goods and services

ε – error

CITY – dummy variable providing for the independence of observations

Note that the variable COST is used only for the analysis of the change in the quality of utilities.

Table 5: Change of the satisfaction score for goods and services between the years 2015 and 2018, in %

City	Medical institutions			Sport facilities			Education			Public parks and gardens		
	2015	2018	change	2015	2018	change	2015	2018	change	2015	2018	change
Cherkasy	2.73	2.52	-7.7%	2.81	2.97	5.7%	2.91	3.03	4.1%	3.45	3.44	-0.3%
Chernihiv	2.74	2.51	-8.4%	2.96	2.86	-3.4%	3.09	2.99	-3.2%	3.19	3.64	14.1%
Chernivtsi	2.91	2.64	-9.3%	2.94	2.72	-7.5%	3.53	3.06	-13.2%	3.16	2.91	-7.9%
Dnipro	2.33	2.53	8.6%	2.78	2.83	1.8%	3.02	3.03	0.5%	3.14	3.14	0.0%
Ivano-Frankivsk	2.51	2.64	5.2%	2.66	2.73	2.6%	2.92	2.86	-2.2%	3.07	3.45	12.4%
Kharkiv	2.82	2.63	-6.7%	3.04	2.87	-5.6%	3.23	2.97	-8.2%	3.81	3.83	0.5%
Kherson	2.83	2.48	-12.4%	2.59	2.64	1.9%	2.92	2.77	-5.3%	2.71	2.80	3.3%
Khmelnytsky	2.73	2.60	-4.8%	2.79	2.99	7.2%	3.16	3.29	4.3%	2.97	3.35	12.8%
Kropyvnytskyi	2.37	2.60	9.7%	2.56	2.77	8.2%	2.53	2.89	14.3%	2.91	3.29	13.1%
Kyiv	2.47	2.56	3.6%	2.77	3.00	8.3%	2.81	2.78	-1.2%	3.07	3.34	8.8%
Lutsk	2.51	2.84	13.1%	2.85	3.35	17.5%	2.86	3.28	14.7%	2.84	3.59	26.4%
Lviv	2.77	2.68	-3.2%	2.87	2.77	-3.5%	3.06	2.92	-4.7%	3.29	3.33	1.2%
Mariupol*	2.77	2.55	-7.9%	2.65	2.93	10.6%	2.96	3.02	2.0%	3.35	3.63	8.4%
Mykolaiv	2.41	2.54	5.4%	2.55	2.64	3.5%	2.66	3.10	16.8%	2.59	2.95	13.9%
Odesa	2.47	2.55	3.2%	2.62	2.95	12.6%	2.74	2.97	8.4%	2.99	3.39	13.4%
Poltava	2.69	2.73	1.5%	2.78	2.93	5.4%	2.92	3.01	3.1%	3.04	3.01	-1.0%
Rivne	2.56	2.66	3.9%	2.70	2.85	5.6%	2.88	3.20	11.1%	3.12	3.50	12.2%
Severodonetsk*	2.48	2.44	-1.6%	2.74	2.31	-15.7%	2.86	2.84	-0.9%	2.66	2.46	-7.5%
Sumy	2.28	2.40	5.3%	3.29	3.11	-5.5%	3.13	3.04	-2.9%	3.08	3.30	7.1%
Ternopil	2.91	2.68	-7.9%	3.24	3.18	-1.9%	3.44	3.25	-5.4%	3.52	3.53	0.3%
Uzhgorod	2.82	2.61	-7.4%	2.88	2.96	2.8%	3.09	3.42	10.7%	2.85	3.07	7.7%
Vinnytsa	2.59	2.73	5.4%	3.02	3.23	7.0%	3.08	3.08	0.0%	3.71	4.00	7.8%
Zaporizhia	2.49	2.54	2.0%	2.69	3.00	11.5%	2.91	3.31	13.6%	2.86	3.23	12.9%
Zhytomyr	2.61	2.72	4.2%	2.75	3.00	9.1%	2.82	3.24	14.7%	2.91	3.23	11.0%
Average score	2.62	2.60	-0.3%	2.81	2.90	3.3%	2.98	3.05	3.0%	3.10	3.31	7.1%
min	2.28	2.40	-0.12	2.55	2.31	-0.16	2.53	2.77	-0.13	2.59	2.46	-0.08
max	2.91	2.84	0.13	3.29	3.35	0.18	3.53	3.42	0.17	3.81	4.00	0.26
sd	0.18617	0.10206	0.07058	0.1937	0.216	0.07492	0.22322	0.17603	0.08332	0.30839	0.33805	0.0789

Note: highlighted sells denote a positive change in the score of the quality of a public service
* Scores for Mariupol and Severodonetsk are for 2016 due to unavailability of the data for 2015

Table 5: continued

City	Cultural venues			Public transportation			Road infrastructure			Average score		
	2015	2018	change	2015	2018	change	2015	2018	change	2015	2018	change
Cherkasy	2.97	3.13	5.4%	2.83	2.73	-3.5%	2.37	2.76	16.5%	2.87	2.94	2.5%
Chernihiv	3.13	2.96	-5.4%	2.98	3.11	4.4%	2.71	3.10	14.4%	2.97	3.02	1.8%
Chernivtsi	3.40	3.04	-10.6%	2.89	2.57	-11.1%	2.29	2.26	-1.3%	3.02	2.74	-9.1%
Dnipro	2.97	2.80	-5.7%	2.56	2.89	12.7%	2.17	2.82	30.0%	2.71	2.86	5.6%
Ivano-Frankivsk	2.97	2.99	0.7%	2.76	3.10	12.5%	2.47	2.95	19.5%	2.76	2.96	7.0%
Kharkiv	3.28	3.04	-7.3%	3.13	3.25	3.8%	3.12	3.35	7.4%	3.20	3.13	-2.2%
Kherson	2.82	2.74	-2.8%	2.62	2.47	-5.9%	2.21	2.42	9.5%	2.67	2.62	-2.1%
Khmelnytsky	3.08	3.21	4.2%	3.02	3.08	1.8%	2.59	2.77	7.0%	2.90	3.04	4.7%
Kropyvnytskyi	2.81	3.17	12.8%	2.39	2.83	18.7%	2.05	2.58	25.9%	2.52	2.88	14.3%
Kyiv	2.86	3.20	11.9%	2.76	3.06	10.9%	2.51	3.06	21.7%	2.75	3.00	9.0%
Lutsk	2.73	3.39	24.2%	3.08	3.30	7.3%	2.56	3.20	25.0%	2.77	3.28	18.2%
Lviv	3.09	3.01	-2.6%	3.03	2.83	-6.8%	3.01	3.11	3.3%	3.02	2.95	-2.3%
Mariupol	2.66	2.86	7.5%	2.98	3.00	0.5%	2.71	3.08	13.7%	2.87	3.01	4.9%
Mykolaiv	2.79	2.94	5.4%	2.46	2.81	14.3%	2.24	2.80	24.8%	2.53	2.82	11.8%
Odesa	2.76	3.15	14.1%	2.75	2.95	7.3%	2.37	2.88	21.6%	2.67	2.98	11.4%
Poltava	2.89	3.03	4.8%	2.69	2.77	3.0%	2.41	2.77	15.0%	2.77	2.89	4.3%
Rivne	2.85	3.31	16.1%	2.90	3.10	6.9%	2.51	2.82	12.4%	2.79	3.06	9.8%
Severodonetsk	3.22	2.94	-8.7%	2.90	2.87	-1.2%	2.22	2.74	23.7%	2.73	2.66	-2.5%
Sumy	3.49	3.13	-10.3%	2.13	2.60	21.8%	2.04	2.47	21.1%	2.78	2.86	3.1%
Ternopil	3.40	3.24	-4.7%	3.07	3.17	3.4%	2.69	3.00	11.5%	3.18	3.15	-0.9%
Uzhgorod	3.07	3.37	9.8%	2.42	2.51	3.9%	1.96	2.45	25.3%	2.73	2.91	6.9%
Vinnytsa	3.14	3.44	9.6%	3.43	3.79	10.5%	3.32	3.68	10.8%	3.18	3.42	7.4%
Zaporizhia	2.91	3.13	7.6%	2.41	2.93	21.8%	1.89	2.57	36.0%	2.59	2.96	14.0%
Zhytomyr	2.87	3.14	9.4%	2.95	2.97	0.5%	2.69	2.87	6.7%	2.80	3.02	8.0%
Average score	3.01	3.10	3.6%	2.80	2.94	5.7%	2.46	2.85	16.7%	2.82	2.96	5.2%
min	2.66	2.74	-10.6%	2.13	2.47	-0.11	1.89	2.26	-0.01	2.52	2.62	-0.09
max	3.49	3.44	24.2%	3.43	3.79	0.22	3.32	3.68	0.36	3.20	3.42	0.18
sd	0.22673	0.18062	9.3%	0.29607	0.28792	0.08617	0.35838	0.31908	0.09087	0.19103	0.17665	0.06445

Note: highlighted sells denote a positive change in the score of the quality of a public service
* Scores for Mariupol and Severodonetsk are for 2016 due to unavailability of the data for 2015

Empirical results and discussion

Road infrastructure

The greatest improvement in the service quality can be seen in the road infrastructure group that includes the scores for quality of roads and street lighting. Over the period from 2015 to 2018 the residents of 23 out of 24 surveyed cities in Ukraine rated the quality of road infrastructure as improved (Table 5). The average improvement among all surveyed cities since 2015 is 16.7 percent. Only the City of Chernivtsi experienced a slight decline of 1.3% in the quality of road infrastructure since the beginning of the decentralization reform. Despite the fact that the quality of road infrastructure experienced the most growth in percentages compared to the score in 2015, its overall quality remains one of the lowest among the seven service groups. In 2018 only medical institutions, the average quality of which slightly decreased since 2015, had a score lower than the score of the road infrastructure.

Model 1 (Table 6) shows that the change in the score of the road infrastructure among the surveyed cities was curve-linear (see Appendix A). The significant results for the variable *Yr* that indicates the number of years past the decentralization reform denotes a positive relationship between years and the quality. Lagged effect of the quality score on itself amounts to 0.78 increase in this year score for 1 point increase in the previous year score.

Model 2, the results of which are presented in Table 7, show that GRP per capita and the level of corruption are strongly associated with a change in the road infrastructure score. An increase of GRP per capita by 10 points is associated with the improvement of the score by 0.07 points, ceteris paribus. This suggests that the improvements in local economy are reflected in the improvement of the road infrastructure. A reduction of the level of corruption

Table 6: Model 1 results for the quality of services

	Dependent variable SCORE for the following services						
Independent variable	Med	Sport	Edu	Parks	Cultural	PubTrans	Roads
Yr	0.471***	0.691***	0.592***	0.629***	0.877***	0.478**	0.458***
	(0.151)	(0.183)	(0.144)	(0.153)	(0.157)	(0.229)	(0.172)
Yr2	-0.096**	-0.163***	-0.139***	-0.148***	-0.202***	-0.091	-0.108**
	(0.037)	(0.046)	(0.036)	(0.038)	(0.039)	(0.056)	(0.043)
Lagged SCORE	0.469***	0.644***	0.523***	0.877***	0.553***	0.533***	0.783***
	(0.093)	(0.097)	(0.088)	(0.063)	(0.086)	(0.098)	(0.066)
EF	-0.001	-0.002	-0.001	-0.002	-0.001	-0.004**	-0.003*
	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
POP	-0.00001	0.00000	-0.0001**	0.00002	-0.00001	0.00002	0.00003
	(0.00003)	(0.00004)	(0.00003)	(0.00003)	(0.00003)	(0.00004)	(0.00004)
URB	-0.0003	-0.001	-0.001	0.0004	-0.002	0.003	0.003
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Constant	0.901***	0.502	1.032***	-0.087	0.743**	0.720	0.179
	(0.335)	(0.367)	(0.341)	(0.264)	(0.349)	(0.434)	(0.239)
Observations	72	72	72	72	72	72	72
R2	0.416	0.531	0.565	0.803	0.595	0.430	0.794
Adjusted R2	0.362	0.488	0.525	0.785	0.558	0.377	0.775
Residual Std. Error (df = 65)	0.140	0.177	0.139	0.150	0.147	0.215	0.170
F Statistic (df = 6; 65)	7.726***	12.265***	14.083***	44.277***	15.922***	8.173***	41.678***

Note: *p<0.1; **p<0.05; ***p<0.01

Table 7: Model 2 results for the quality of services

	Dependent variable SCORE for the following services						
Independent variable	Med	Sport	Edu	Parks	Cultural	PubTrans	Roads
EF	0.240**	0.157	0.134	0.069	0.271**	0.191	-0.003
	(0.115)	(0.118)	(0.105)	(0.096)	(0.108)	(0.182)	(0.113)
GRP	0.001	0.004	0.003	0.003	0.004*	-0.007*	0.007***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.004)	(0.002)
POP	0.002	-0.002	-0.003	0.002	0.001	-0.002	-0.004
	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)	(0.007)	(0.005)
URB	-0.621**	-0.397	-0.343	-0.336	-0.659*	-0.500	-0.022
	(0.264)	(0.271)	(0.241)	(0.221)	(0.249)	(0.418)	(0.261)
CORR	-0.208	-0.294**	-0.274**	-0.426***	-0.462***	-0.446**	-0.357**
	(0.137)	(0.140)	(0.124)	(0.114)	(0.128)	(0.216)	(0.135)
Constant	34.554**	24.152*	21.819*	21.607*	36.964***	30.316	5.346
	(13.508)	(13.857)	(12.305)	(11.296)	(12.705)	(21.373)	(13.334)
Observations	70	70	70	70	70	70	70
R2	0.650	0.752	0.757	0.898	0.765	0.612	0.904
Adjusted R2	0.425	0.593	0.601	0.832	0.614	0.362	0.842
Residual Std. Error (df = 42)	0.151	0.155	0.137	0.126	0.142	0.239	0.149
F Statistic (df = 27; 42)	2.892***	4.720***	4.846***	13.696***	5.057***	2.453***	14.583***

Note: *p<0.1; **p<0.05; ***p<0.01

in the local government also significantly influences a change in the quality of road infrastructure. The reduction of the corruption score by 1 point is associated with an increase of the quality score by 0.357 points. This relationship suggests the natural hindrance of dishonest conduct and corruption on the public provision of good and services. We found no relationship between ethnic fractionalization, level of urbanization or the total population and the score of the road infrastructure.

Overall, the quality of road infrastructure notably improved since 2015. Similar to the results presented by the *Report of Successfulness of Amalgamation of Territorial Communities*, we can assume that Kyiv and the cities of regional significance made the road infrastructure one of their first priorities. The significant improvements in the quality of road infrastructure over the past four years point out that the communities greatly focus on increasing the quality of this service. The service that at the beginning of the decentralization reform had the lowest among the seven service scores, 2.46 out of 5, unsurprisingly attracts the most attention from the decentralized communities.

Public parks and gardens

The second highest average percentage change from 2015 to 2018 occurred in the quality of public parks and gardens. The average improvement in the quality of parks and gardens comprises a 7.1 percent change among all surveyed cities. Only four out of 24 cities in the poll experienced a decline in the quality of public parks. The significant improvement in the quality of public parks and gardens is not surprising. As Berney (2011) states in her research, among different types of public or infrastructure projects, improvement and development of public spaces, including parks and gardens, is considered by local governments to be easy and cheap to implement while producing visible results. Moreover,

public parks are “framed, messaged, and staffer as spaces of citizen encounter and they in turn shape citizen relationships” (Berney, 2011, p. 29). Therefore, an improvement of public parks and gardens might help citizens to shape their identity as a part of the community and increase feelings of responsibility for the future of the community they belong to.

Model 1 shows results similar to the road infrastructure. The change in the quality of the public parks and gardens appears to be linear. The coefficient of lagged quality score of the road infrastructure indicates 0.877 points increase in the quality in the following year for every 1 point increase in the quality in the previous year’s score. For graphical evidence of the change of the score over the time, see Appendix A, Figure A.2 for predicted values. As can be seen from Figure A.2, the change in the quality of public parks and gardens between 2016 and 2017 was more significant than the change in the period 2017-2018. This suggests that the greater increase in the quality of public parks and gardens occurred shortly after the begging of the reform, and later it took a slower pace.

Model 2 shows that the level of corruption is statistically significant when looking at the quality of public parks and gardens. A reduction of the corruption score by 1 point is associated with an increase in the quality of public parks and gardens score by 0.426 points. We found no relationship between the ethnic fractionalization, GRP per capita, level of urbanization or population change and the score of quality of public parks and gardens.

Sport facilities and cultural venues

As a result of the decentralization process, the capable local governments are now responsible for improving the quality of life, including its socio-cultural aspects. Bringing communities together through sport and culture is one of the goals of the decentralization reform. Communities that received additional authority and funds due to decentralization now have an opportunity to decide how to improve their socio-cultural life and recreation.

The overall improvement in the quality of cultural venues throughout the country is estimated to be 3.6%, which brings the average score to 3.1 out of 5 in 2018. Among the surveyed cities, 15 (62.5 percent of the poll) experienced an improvement in this score over the last 4 years. The biggest improvement was noticed by the citizens of Lutsk. The city's work on the cultural facilities improved the score by 24.2 percent increasing it from 2.73 to 3.39, what became the second-best score among the surveyed cities. In the two cities that had the best scores in the quality of cultural venues in 2015, Chernivtsi and Sumy, with 3.40 and 3.49 scores respectively, the quality decreased by more than 10 percent. This might be due to the difficulties and limitations of the method of survey data collection. We should mention that when answering Likert-type questions, respondents tend to avoid "extremes", ‘excellent' or ‘terrible' choices. Therefore, the central choices get more usage causing the results to anchor around the central choice mostly eliminating a possibility of the maximum or minimum possible score even though that might be the accurate representation of the reality (Bishop & Herron, 2015). The anchoring effect that limits the possibilities of service to reach score 4 out of 5 might be one of the possible explanations of why the scores in Chernivtsi and Sumy decreased.

Similar to trends we observed in the quality of cultural venues, we can see an overall average improvement in the quality of sport facilities, a change of 3.3 percent. 17 out of 24 surveyed cities (71 %) experienced an increase in the quality of sport facilities. The leading cities with more than 10% improvements to the quality of sport facilities are Lutsk (17.5%), Odesa (12.6%), Zaporizhia (11.5%) and Mariupol (10.6%). The biggest decline in the quality of services was experienced by the citizens of Severodonetsk (-15.7%).

According to the results of Model, the coefficient of lagged quality score of cultural venues indicates 0.55 points increase in the quality in the following year for every 1 point increase in the quality in the previous year's score. The same for the quality of the sport facilities indicates 0.64 points increase in the quality in the following year for every 1 point increase in the quality in the previous year's score. For predicted values of the change of the score over time, see Appendix A, Figure A.6 for the quality of cultural venues and Appendix A, Figure A.4 for the quality of sport facilities. As can be seen from figures A.4 and A.6, the quality of both services between years 2016 and 2017 significantly increased, while between the period 2017-2018 the quality slightly decreased. This suggests that an increase in the quality of sport and cultural facilities occurred shortly after the begging of the reform and later it has stagnated.

According to Model 2, a reduction in the corruption score by 1 point is associated with an increase in the quality of sport facilities by 0.29 points. The same for cultural venues is associated with an increase in the quality of by 0.46 points. Moreover, the quality of cultural venues is positively associated with the ethnic fractionalization and negatively associated with the level of urbanization. Higher levels of ethnic fractionalization and higher numbers of ethnic groups, we speculate, are bringing more diversity to the cultural life of the communities and potentially positively affect the quality of cultural facilities. The negative relationship between the quality of cultural venues and the level of urbanization shows that it is easier to provide higher quality services in less populated areas. This could be attributed to overcrowded venues in more urban areas, for example, or a greater possibility for a venue to make an impact in cultural life of a community.

Comparing the results in the changes of the road infrastructure, parks and gardens, sport, and cultural venues, we see that the improvements of the first two services are higher than the changes in the quality of the sport and cultural facilities. This can be explained by the differences in the length of necessary time periods for any positive change to occur. Although the quality of roads and public parks can increase over one or two seasons, socio-cultural services require more time for the visible improvements to happen. Another factor that might slow down improvements in socio-cultural areas, is the limited availability of the human capital that is necessary to boost the quality of life in a community. It requires more specialized labor to build a sporting complex than a road.

Public transportation

Cities in Ukraine heavily rely on public transportation as the most commonly used means for commuting. Since the beginning of the decentralization reform, the quality of public transportation improved on average by 5.7%. The average score increased from 2.80 to 2.94. 19 out of 24 cities (79%) experienced an improvement in the quality of public transportation. The biggest improvement, 21.8%, was noticed by the citizens of Sumy, where the quality of the public transportation was the lowest in 2015, and Zaporizhia that increased the quality score from 2.41 to 2.93. The leading city in the quality of public transportation remained the same. The City of Vinnitsa had the highest score in 2015 and improved the quality by 10.5%, which resulted in a quality score of 3.79 on the scale of 5.

According to the results from Model 1, the coefficient of lagged quality score of public transportation indicates 0.53 points increase in the quality in the next year for every 1 point increase in the quality in the previous year's score. The quality of public transportation has been increasing steadily over the period from 2016 to 2018 (see Appendix A, Figure

A.7). Model 1 also shows that each additional point of ethnic fractionalization is associated with a decrease in the quality of public transportation. Model 2 shows that the quality of public transportation has a statistically significant negative relationship with the change of the GRP per capita and level of corruption. Interestingly, a decrease of GRP per capita by 10 points is associated with a decrease of the score by 0.07. This is contrary to our hypothesis where we expected to see a positive relationship between an increase of the GRP per capita and an improvement in the quality of the public services. However, we need to mention that the significance level of this relationship indicates that there is 10% probability that the results are due to chance.

Similar to other the other services measured, there is strong a relationship between the level of corruption and the quality of public transportation. A reduction of the corruption score by 1 point is associated with an increase in the quality of sport facilities by 0.45 points. Again, for public transportation, we expected an increase in the quality of the service with any decrease in fraudulent or corrupt conduct of those in power.

Education

The average quality of education increased since the beginning of the decentralization reform by just 3.0%. Only 13 communities showed an increase in the quality and one community remained the same score, while 10 cities experienced a decrease in the quality of the education system. As we know, the decentralization reform aims to restructure the education system through the establishment of the hub-branch school system. It is expected that the implementation of this reform will take more time and the positive results will be seen after 2020.

Initially, in 2015 the quality of education on average was rated by the respondents relatively high, the quality of education was third after public parks and gardens and cultural venues. After the improvement of 3% on average among all cities, it remains in third place reaching the score of 3.05 points.

Model 1 shows that the coefficient of lagged quality score of education indicates 0.52 points increase in the quality in the following year for every 1 point increase in the quality in the previous year's score. As can be seen from Figure A.5, the quality of education significantly increased between 2016 and 2017, while between the period 2017-2018 the quality slightly decreased, similar to what be observed in the quality of cultural and sport facilities.

Although the change in the population from Model 1 has an effect on the regression model, it does not have a substantive significance, or, in other words, the observed effect is too small to be meaningful. The population of a city should increase by 1,000,000 to influence an increase of a score by 0.1 points. Considering that the total population in Ukraine is slightly decreasing and only a few cities experience growth, it is very unlikely that a significant increase in the population will occur in the future.

Model 2 shows that the quality of education has a negative relationship with the level of corruption. A reduction of the corruption score by 1 point is associated with an increase in the quality of public parks and gardens score by 0.426 points.

Medical institutions

The healthcare reform was launched in 2017 and has not had enough time to show sufficient results. However, the local governments have been receiving medical subventions the allocation of which was first approved by the law 'Some issues of providing a medical

subvention from the state budget to local budgets' from January 23rd, 2015. The medical subvention can be used to pay current expenditures of the health facilities and health care programs. It also can be allocated towards the optimization of the network of health facilities.

The average score for the quality of the medical facilities slightly decreased by 0.3% over the 4-year period starting in 2015. In 2018 the average score is estimated to be 2.6, the lowest among the seven services. This is the only service that dropped in the average score. Only 13 out of 24 (54%) cities experienced an increase in the quality of the medical institutions with the highest improvement of 13.1% in Lutsk.

Model 1 shows that the coefficient of lagged quality score of medical institutions indicates 0.47 points increase in the quality in the following year for every 1 point increase in the quality in the previous year's score. Figure A.3 (see Appendix A) shows, that the quality of medical institutions is increasing over time; however, the pace of the increase is the slowest among all analysed services.

Model 2 shows that the quality of medical institutions is positively and significantly associated with the ethnic fractionalization and negatively associated with the level of urbanization. Similar to cultural venues, a negative relationship between the quality of medical institutions and the level of urbanization shows that it is easier to provide higher quality medical services in less urbanized areas where the number of patients and thus, the demand on institutions, will be lower.

The achievement of visible improvements in the healthcare system and quality of medical institutions will take more time that it took for the quality of road infrastructure and public parks and gardens to increase. Considering the fact that as of 2018 the medical

institutions had the lowest average score among analyzed cities, there is an urgent need in the reform of health care system.

Utilities

Among three utility services that we considered in the study, trash removal, sewer, and water supply, the same improvement of the quality of 5.12% occurred in water supply and sewer, while the quality of trash collection increased by only 3.51% (Table 8). The average score of the quality of water supply increased from 3.22 to 3.36 on the 5-level scale. 20 out of 24 cities (83%) experienced an increase in the quality of water supply. The leader in the improvements is the city of Uzhgorod. Over the 4-year period, the city improved the quality of water supply by 36.5% and reached a score of 2.99 which is, nevertheless, is one of the lowest scores among the surveyed cities. Substantial increase in the quality also is noticed by the citizens of Khmelnitsky (14.5%), Kropyvnytsky (12.7%), Lutsk (19.2%), and Mariupol (10.6%). The biggest decline in the quality of water supply is observed in the City of Kharkiv (-8.6%).

On average the score of the quality of sewer increased from 2.97 to 3.12 over the 4-year period. The respondents in 20 out of 24 cities (83%) noticed an improvement in the quality of the service, while in only 4 cities the quality decreased. The best results in the improvement of sewer are shown by the City of Zaporizhia with 14.44% increase of the score. Contrary, the quality of provision of sewer in Chernivtsi declined by 19.3%. Due to the negative results in the past 4 years, the quality of sewer in Chernivtsi in 2018 was the improvements were noticed in 17 cities (71%). The best results in improving the quality of trash removal are experienced by the citizens of Mariupol. The quality of the service increased by 21.9%. Dnipro (14.1%), Kyiv (10.4%), Zaporizhia (14.13%), Mykolaiv

Table 8: Change of the satisfaction score for utilities between the years 2015 and 2018, in %

City	Trash removal			Sewer			Water supply			Average score		
	2015	2018	change	2015	2018	Change	2015	2018	change	2015	2018	change
Cherkasy	3.34	2.91	-12.87%	3.26	3.11	-4.60%	3.53	3.57	1.13%	3.38	3.20	-5.33%
Chernihiv	3.11	3.22	3.54%	2.99	3.14	5.02%	3.4	3.24	-4.71%	3.17	3.20	1.05%
Chernivtsi	3	2.64	-12.00%	2.96	2.39	-19.26%	3.15	2.98	-5.40%	3.04	2.67	-12.07%
Dnipro	2.77	3.16	14.08%	2.92	3.1	6.16%	3.22	3.26	1.24%	2.97	3.17	6.85%
Ivano-Frankivsk	3.09	3.23	4.53%	2.98	3.09	3.69%	3.31	3.36	1.51%	3.13	3.23	3.20%
Kharkiv	3.71	3.89	4.85%	3.54	3.68	3.95%	3.7	3.38	-8.65%	3.65	3.65	0.00%
Kherson	3.01	2.83	-5.98%	2.89	3.02	4.50%	3.09	3.18	2.91%	3.00	3.01	0.44%
Khmelnytsky	3.01	3.13	3.99%	2.75	3.07	11.64%	3.03	3.47	14.52%	2.93	3.22	10.01%
Kropyvnytskyi	3.06	3.22	5.23%	2.7	3.03	12.22%	3.06	3.45	12.75%	2.94	3.23	9.98%
Kyiv	2.89	3.19	10.38%	2.92	3.18	8.90%	3.15	3.21	1.90%	2.99	3.19	6.92%
Lutsk	3.18	3.41	7.23%	2.99	3.28	9.70%	3.12	3.72	19.23%	3.10	3.47	12.06%
Lviv	3.57	3.38	-5.32%	3.1	3.27	5.48%	3.78	3.76	-0.53%	3.48	3.47	-0.38%
Mariupol	3.1	3.78	21.94%	3.18	3.29	3.46%	3.03	3.35	10.56%	3.10	3.47	11.92%
Mykolaiv	2.7	3.2	18.52%	2.66	2.91	9.40%	3.24	3.2	-1.23%	2.87	3.10	8.26%
Odesa	3.09	3.28	6.15%	2.66	2.96	11.28%	3.26	3.26	0.00%	3.00	3.17	5.44%
Poltava	3.21	2.98	-7.17%	2.97	2.92	-1.68%	3.22	3.17	-1.55%	3.13	3.02	-3.51%
Rivne	3.34	3.18	-4.79%	3.11	3.21	3.22%	3.38	3.5	3.55%	3.28	3.30	0.61%
Severodonetsk	3.28	3.39	3.35%	3.11	3.38	8.68%	3.39	3.65	7.67%	3.26	3.47	6.54%
Sumy	2.68	3.02	12.69%	2.64	2.92	10.61%	2.8	3.06	9.29%	2.71	3.00	10.84%
Ternopil	3.36	3.64	8.33%	3.11	3.42	9.97%	3.37	3.49	3.56%	3.28	3.52	7.22%
Uzhgorod	3.39	2.94	-13.27%	2.62	2.54	-3.05%	2.19	2.99	36.53%	2.73	2.82	3.29%
Vinnytsa	3.8	3.93	3.42%	3.39	3.62	6.78%	3.61	3.77	4.43%	3.60	3.77	4.81%
Zaporizhia	2.83	3.23	14.13%	2.84	3.25	14.44%	3.06	3.35	9.48%	2.91	3.28	12.60%
Zhytomyr	3.04	3.14	3.29%	3.07	3.14	2.28%	3.2	3.35	4.69%	3.10	3.21	3.44%
Average score	3.15	3.25	3.51%	2.97	3.12	5.12%	3.22	3.36	5.12%	3.11	3.24	4.34%
min	2.68	2.64	-13.27%	2.62	2.39	-19.26%	2.19	2.98	-8.65%	2.71	2.67	-12.07%
max	3.80	3.93	21.94%	3.54	3.68	14.44%	3.78	3.77	36.53%	3.65	3.77	12.60%
s.d.	0.29	0.32	0.10	0.24	0.29	0.07	0.32	0.23	0.09	0.24	0.25	0.06

(18.52%), and Sumy (12.7%) also significantly improved the quality of trash removal. Overall, the quality of utilities improved by 4.34% with 19 cities having positive results, one city being stable, and 4 cities experiencing a decline in the average score of utilities. The City of Zaporizhia shows the best results with the 12.6% improvements in the quality.

Model 1 shows that the coefficient of lagged quality score of trash collection indicates 0.49 points increase in the quality in the following year for every 1 point increase in the quality in the previous year's score. The same for water supply and sewer amounts to 0.66 points and 0.54 points increase respectively in the quality in the following year for every 1 point increase in the quality in the previous year's score (see Appendix A, Figure A.8). Even though the coefficients of ethnic fractionalization (-0.005) and the level of urbanization (0.005) on the quality of sewer services from Model 1 are significant in the regression model, they do not have a substantive significance. The same can be said of the effect of ethnic fractionalization on the average quality of services.

The only statistically significant effect from Model 2 is the effect of the level of urbanization on the quality of water supply. A reduction in the level of urbanization by 1 point is associated with an increase in the quality of water supply by 0.482 points. Similar to cultural venues and the quality of medical institutions, lower levels of urbanization show that it is easier to provide higher quality water supply services when there is a smaller demand on the service and its infrastructure.

Table 9: Model 1 results for the quality of utilities

	Dependent variable SCORE for utilities			
Independent variable	Trash	Water	Sewer	Average
Yr	0.710**	0.140	0.602***	0.195
	(0.353)	(0.184)	(0.216)	(0.137)
Yr2	-0.172*	-0.016	-0.124**	-0.037
	(0.090)	(0.044)	(0.053)	(0.035)
Lagged SCORE	0.486***	0.662***	0.542***	0.785***
	(0.116)	(0.078)	(0.096)	(0.067)
EF	-0.003	-0.002	-0.005**	-0.002*
	(0.003)	(0.002)	(0.002)	(0.001)
POP	0.0004	-0.0002	0.0004	0.0001
	(0.001)	(0.0004)	(0.0004)	(0.0003)
URB	0.004	0.001	0.005**	0.003
	(0.004)	(0.002)	(0.002)	(0.002)
COST	0.006	-0.003	-0.012	0.006
	(0.007)	(0.011)	(0.018)	(0.008)
Constant	0.753	0.945***	0.609	0.315
	(0.600)	(0.308)	(0.387)	(0.267)
Observations	68	71	71	72
R2	0.289	0.635	0.531	0.740
Adjusted R2	0.207	0.594	0.479	0.711
Residual Std. Error	0.313 (df = 60)	0.174 (df = 63)	0.205 (df = 63)	0.133 (df = 64)
F Statistic	3.491***(df=7; 60)	15.629***(df=7; 63)	10.190***(df=7; 63)	25.984***(df=7; 64)

Table 10: Model 2 results for the quality of utilities

	Dependent variable SCORE for utilities			
Independent variable	Trash	Water	Sewer	Average
EF	-0.319	0.141	0.217	0.044
	(0.366)	(0.117)	(0.178)	(0.110)
GRP	-0.004	0.001	0.001	0.0003
	(0.011)	(0.003)	(0.004)	(0.002)
POP	-0.145	-0.020	0.037	0.059
	(0.257)	(0.045)	(0.070)	(0.044)
URB	0.489	-0.482*	-0.617	-0.208
	(0.740)	(0.272)	(0.412)	(0.254)
CORR	-0.076	0.085	-0.099	-0.116
	(0.326)	(0.159)	(0.236)	(0.148)
COST	-0.046	0.026	0.018	-0.021
	(0.029)	(0.016)	(0.041)	(0.020)
Constant	-15.438	29.242**	34.386	13.224
	(34.420)	(13.913)	(21.083)	(12.967)
Observations	62	68	68	70
R2	0.599	0.863	0.680	0.820
Adjusted R2	0.301	0.765	0.449	0.697
Residual Std.Error	0.315 (df = 35)	0.145 (df = 39)	0.220 (df = 39)	0.142 (df = 41)
F Statistic	2.008** (df=26;35)	8.790*** (df=28;39)	2.953*** (df=28;39)	6.673*** (df=28;41)

Note: *p<0.1; **p<0.05; ***p<0.01

Predicted score change for all services

We used Model 2 to predict the average score change among the cities of regional significance. These graphs are presented in Appendix A. Based on the graphs, we can divide the services into those that experience steady improvements in quality and those that stagnate after making initial improvements. The first group includes services such as road infrastructure, public parks and gardens, medical institutions, public transportations, and utilities. These services experienced stable increases in quality over the measured periods and would, potentially, see the increases in the future. We should note that the change in the quality of medical institutions has the slowest pace among all measured services As we discussed earlier, the Ukrainian government is expecting rapid improvement to medical institutions by 2020. Based on the results, we can speculate that improvements in the quality of medical institutions need more time to take place and for the changes to be recognized by the citizens.

The second group of services, including education, sport facilities, and cultural venues, experienced rapid increase of the quality in the period from 2016 to 2017, but the quality remained stable or slightly increased in the following year. This may indicate that the additional budgeting of the services that started in 2014-2015 provided quick results in a short period but slowed down later when looking look at the long-term effects. This trend indicates that this group of services needs special attention by policy makers and local officials, and should be monitored for results. Identifying and addressing the reasons for stagnating quality will ensure that the services continue to improve. An evaluation of the causes should include an analysis of the local administration as well as the views and opinions of the users of the services.

Limitations

As already indicated, this study has some limitations related to data availablility. Other limitations are related to the methodology of collecting observations of the dependent variable - the quality of the local services in major cities in Ukraine. The dependent variable was measured using a survey, which collects subjective opinions of the respondents. The Ukrainian Municipal Survey assess the quality of public services and its change over time. However, as Van de Walle, (2018, p.229) points out "subjective assessments, such as satisfaction, of a public service, do not necessarily reflect objective features or performance of that service, and satisfaction ratings are influenced by factors other than service quality". In other words, higher satisfaction with a service does not necessarily reflect an increase in service quality.

However, this was the best usable data available. Thus, the analysis assumed that the quality of services did, in fact, change over time, and that it was changing in the same settings (the same geographical areas and affected by the same external influences). Therefore, the same person asked for her subjective opinion about the quality of local public services at a different time can clearly evaluate whether the change occurs. To reduce bias in studies of quality based on the public evaluations, future researchers may incorporate previous expectations and opinions to assess how these may impact later satisfaction. Using this approach, a study can address whether satisfactions or dissatisfaction with a service is connected to any objective measure of quality or as a result of other external influence that may be controlled. Considering respondent's behavior, future researchers can also assess whether the opinion about a particular service influences thier attitudes towards the government system as a whole (Van de Walle, 2018), quite possibly the case in Ukraine, where corruption in government still remains high.

Another limitation relates to the dependent variable and the use of a Liker-type questions. When answering Likert-type questions, respondents tend to avoid "extremes", choices like ‘excellent' or ‘terrible'. This tendency in survey respondants causes the central choices to be selected more frequently and the results to anchor around the central choice, greatly eliminating the possibility of a variable to gain the maximum or minimum score even though that might be the precise representation of reality (Bishop & Herron, 2015).

Additionally, in this study, the measure of ethnic fractionalization creates some limitations as well. Ethnic fractionalization accounts for the probability of choosing two persons that belong to two different ethnic groups from a population, but it does not account for the total (n) number of the ethnic groups, nor does it account for the extremity of the differences between those groups. Differences like religion, language, culture, and ultimately, political differences, often have different effects on local governments. Also, the index does not account for ethnicity itself and does not show whether a region has more ethnic Ukrainians or ethnic Russians. For example, the Eastern oblasts of Ukraine have high ethnic fractionalization indexes because the proportions between ethnic Ukrainians and ethnic Russian are close to half. At the same time, Zakarpatska oblast has a relatively high index as well, but this measure is due to a larger number of ethnic groups, each of which has a small weight in the total population. In this situation, both geographic areas have a similar looking ethnic fractionalization index, but it is obvious that the oblasts are very different in terms of ethnic composition, and therefore different in culture and politics. For future research different more sophisticated methods of measuring diversity, such as proposed by Arkadiev (2010) can be used, if enough data is available.

CHAPTER 5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

In this study, we analyzed the effects of the decentralization reform, that started in Ukraine in 2014, on the quality of public services provided on a local level. Before the decentralization, local governments in Ukraine were dependent on transfers from the central government to maintain the quality of local services and infrastructure. Due to the inability of the central government to account for specific local needs and allocate sufficient funds to fulfill these needs, the quality of local services and infrastructure were low. Decentralization of governance is expected to solve this budgetary problem and improve the quality of services and infrastructure. Regardless of the complications faced by the reform due to the military conflict and adoption of legislation including the Amendments to the Constitution, positive results of the decentralization reform on the quality of local public services can be seen already. As we observe in the study, since the beginning of the decentralization reform, the average quality of goods and services increased among the cities participated in the Ukrainian Municipal Survey. Only the quality of medical institutions was indicated by the respondents as slightly decreased. The most substantial improvements are seen in the quality of the road infrastructure and public parks and gardens.

Based on the results of the study, we accept **Hypothesis 1:** decentralization leads to an improvement in the quality of local public services. However, we recognize that with the average improvement in the quality of services, a quarter of the surveyed cities experienced a decline in the quality of services, on average, since the beginning of the decentralization reform.

Overall the quality of the goods and services in cities of regional significance that were surveyed has improved since the beginning of the decentralization reform. The quality of public services experienced an increase of 5.2% in 2018 compared to the quality in 2015. The quality of utilities also increased by 4.34% over the period from 2015 to 2018.

While the average quality of all services among the surveyed cities increased, some communities experienced a decline in the quality of local public services. Six individual cities, Chernivtsi, Kharkiv, Kherson, Lviv, Severodonetsk, and Ternopil, experienced a decline in the quality of all public services and four cities, Chernivtsi, Lviv, Cherkasy, and Poltava, faced a decline in the quality of all utilities provided. Overall, the city of Chernivtsi (the only city that experienced a decrease of each public and utility service) showed the most negative results with the decrease of the overall quality of services by 9.1% and quality of utilities by 12.1%. One possible explanation for this pattern is the increased level of corruption in 2017 compared to the level of 2015 in Chernivtsi (see Appendix B, Figure B.1). However, in another city that experienced a similar increase in corruption, Zhytomyr, the quality of each service still improved. This contradictory finding suggests that the level of corruption may not be a good predictor of service quality.

A close look at the case of the city of Chernivtsi showed a plausible cause of the city's poor development – low level of democracy and an inability of elected officials to find common ground. The reasons for these disagreements are the confrontation of political clans and the power of oligarchs in the area. Therefore, the city council has been ineffective in decision-making regarding infrastructure development (improvement of road infrastructure) and improvements in the quality of public services such as water supply and public transportation. Resignation of the mayor by the city council members did not add to the

public welfare. “In less than ten years, [Chernivtsi] is left without a head for the second time. And the second time - not by the will of the voters, but through the confrontation of political clans” – a local news article (Gavriluk, 2018). In 2015 the local constituency gave more than 50% of votes to Mr. Kaspruk, who became the mayor of the city. In 2018 the members of the city council voted for him to resign. As another article claims, fewer people voted for the 29 council members that supported the resignation than voted for the mayor (Churylova, 2018). In 2019 Mr. Kaspruk was renewed in his position by a court decision. However, even after the return of the legitimate mayor the political confrontations in the city remain in place negatively affecting the quality of life for the citizens.

As we know from the literature, when decentralization occurs without simultaneous democratization it does not provide successful results. This seems to be the case in Chernivtsi. Even though the citizens of Chernivtsi are politically decentralized and are able to use their rights to vote for a mayor and city council members, the confrontation of political clans impedes the implementation of this democratic mechanism. Elected by the majority, the mayor was not able to perform his duties due to the political conflict, reducing the effect of the citizens’ democratic participation.

Based on the fact that the highest increase in the quality we see in the quality of road infrastructure and public parks and gardens, we accept **Hypothesis 2:** decentralization of democratic governments leads to a greater focus on public services that can demonstrate immediate improvements than those that need more impact. The results of this study support Berney (2011) findings that described public spaces as easy and cheap development that local governments can implement while producing visible results. 95% of the surveyed cities improved the quality of road infrastructure by 16.7% on average, which resulted in an

increase in the average score from 2.46 to 2.85 on the 5-level scale. 79% of the cities from the poll enhanced their public spaces by improving public parks. The quality of road infrastructure and public parks can also be described as easy, cheap, and fast improvement. The improvements might work towards uniting communities together and increasing their identification as a part of a community. Indirectly, the improvements of the public spaces might increase public participation in the planning process if each citizen develops feelings of significance in being a part of a city and having a voice and responsibility of the future community development.

We found no evidence to support **Hypotheses 3** that larger communities are more likely to have a higher quality of public services due to economies of scale than smaller communities. We should mention that the size of the communities considered in our study is sufficient to provide economies of scale for the provision of public services. However, a study that includes more heterogeneously sized communities may be more suitable for testing the relationship between the quality of services and economies of scale.

The quality of medical institutions and cultural venues is positively associated with ethnic fractionalization, contradictory to our **Hypothesis 4**, which states that less diverse municipalities are more likely to have better public services than more diverse ones. Additional research is needed to explain this trend. The results of this study might be biased due to limitations connected to the methodology of calculating ethnic fractionalization.

We found no evidence to support **Hypothesis 5,** more urbanized municipalities are more likely to have better public services. In fact, the results are opposite to the quality of medical institutions and cultural venues. A negative relationship between the quality of these

two services and the level of urbanization may show that it is easier to provide higher quality services in less densely populated areas where the number of people seeking service is lower.

Recommendations

Based on the results, we recommend, first, to establish monitoring of the work of the local governments. The results reveal a necessity for the central government to monitor the work of local governments in terms of expenditures, allocations of budgets, and implementations of the goals and objectives related to the improvement in the quality of local services. Creation of a commission or other governing body that regulates the rates and quality of services will help to monitor those services. Ukrainian government can use Utility Regulatory Commissions or Public Service Commissions that operate in the United States as an example of such commissions. The monitoring also should ensure that the local governments concentrate not only on the policies and actions that produce visible improvements in short periods of time, such as road infrastructure and public parks, but also on services that require longer time periods and greater financing for improvement.

Secondly, there is a need to consciously work toward an increase in public participation in decision-making. Trust building between the local governments and citizens might help to increase the participation and engagement of the community in local governance. Also, increased engagement will make it easier for local governments to be aware of the needs of the population.

The central government should also continue to provide training for local officials. As we mentioned previously, the lack of experience in comprehensive planning and economic development planning for communities results in the low efficiency of the local governments. Through the introduction of specific training, workshops, or experience

exchange central government can facilitate future improvements in the quality of local public services.

Our main recommendation for local governments in Ukraine will be to separate responsibilities between public and private service providers. Shifting the responsibility of providing public services from local governments to private companies will ensure more consumer oriented services, and therefore, higher quality of services due to market competition. Services that cannot be privatized and should remain public, such as medical services, education, roads, and public parks, will get more attention from the local governments if other services are privatized; for example, trash collection, water supply, sewer, some means of public transportation, and some sport and cultural venues. As the study by Cuadrado-Ballesteros, García-Sánchez, & Prado-Lorenzo (2012) shows, public companies are better in providing public transportation, health care, and trade services while outsourced private companies provide better quality for water services and waste collection. Without this separation, the provision of services would probably decline. As we can observe in the city of Chernivtsi, due to the political conflicts in the city council, the local government could not effectively operate and make decisions about the infrastructure development and improvements in the quality of public services. If services like water supply or public transportation were less reliant on the local government, we would probably see positive changes in the city of Chernivtsi and even better results in the rest of the surveyed cities.

Another way to improve the quality of public services is to involve the public in the process. Working groups that should include representatives from the local administrations, private services suppliers, local NGOs, and active citizens may work on the improvements and development of a particular service. Through the development of maps, inventories,

identification of weaknesses, and monitoring processes working groups can establish specific plans for improvements.

The modernization of public services could also be aided by the implementation of public-private partnerships. During large-scale infrastructure projects like the replacement of water pipes in a city, local governments face issues with cost, funding, and challenges in management. Through the public-private partnerships local governments can reduce the dependence of a project only on the government and share funding and management responsibilities with private companies and suppliers, rather than develop independently.

Besides the proposed recommendations, we stress the importance of good governance in reaching goals for improvements in the quality of public services. Low levels of corruption, good management of budget and resources, and a strong commitment from government representatives will always be crucial to the achievement of positive results.

Conclusion

In this study, we assessed the effects of government decentralization on the quality of public services in major cities in Ukraine, where the decentralization reform has been underway since 2014. The results show that on average the quality of public services in Ukrainian cities of regional significance increased over the period 2015-2018. Among all analyzed services, the quality of road infrastructure and public parks and gardens increased the most substantially. In addition, lesser increases are observed in the quality of education, sport facilities, cultural venues, public transportation, and utilities. Only the quality of medical institutions slightly decreased on average among all the surveyed cities.

In one of the cities measured, Chernivtsi, the quality of all services decreased, possibly due to political conflicts in the city council, a unique political environment among

the others. The local government in Chernivtsi could not effectively operate, setting the city apart from the others in our study, in services offered and in its appearance to its citizens, and negatively affecting the measure of the quality of public services.

Due to the unavailability of data for each municipality in Ukraine, this study is limited to cities of regional significance. Additional studies could benefit from more data if it becomes available. More data would allow researchers to assess changes in the quality of services in municipalities with a population smaller than 50,000 people. Additionally, if more data were available it would be beneficial to carry out a similar study over a longer period of time. For this study, we used data for 4 years, which may be an insufficient period to reflect substantial changes in the quality of services.

Moreover, future studies that seek to measure the quality of public services ought to address the limitations of this study where possible. As we mentioned, more advanced methods of measuring the quality of services like SERVQUAL can give more reliable results. In addition, methods that account for the number of ethnic minorities, and their percentages in the total population, to measure the level of ethnic fragmentation could be of a greater explanatory value for future research. The researcher could also explore different measures for the level of corruption. Some measures may be considered more valid than others. For example, instead of using the citizens' perspective on the change in the level of corruption, corruption could be measured using indicators that directly reflect local government transparency, efficiency, and responsiveness. A measure of this kind would eliminate some of the unreliability of survey responses.

Based on the results observed in the study, we have several recommendations. First, we would like to stress the necessity for restructuring the way services are operated in most

of Ukraine. This ought to come in the form of privatization of some public services and offering public-private partnerships and subcontracts. Secondly, we recommend establishing a monitoring process that will allow assessing the work of local governments in terms of expenditures, allocations of budgets, and implementations of the goals and objectives related to the improvement of governance and in the quality of local service, in particular. Additionally, an increase in the citizens' participation in the decision-making process will help local governments to reflect on the needs of the population.

These recommendations are our best attempt to provide a prescriptive action for the government of Ukraine and the decentralization reform. Complete decentralization of the government will undoubtedly take a longer time than the five years that have passed since the reform's start. The communities of Ukraine would do well to observe the events that have unfolded in Chernivtsi and try to avoid the same outcomes. The citizens of those communities and the public services they require will be of better quality.

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Якщо особливості місцевого самоврядування дадуть можливість реінтегрувати Донбас, то чому цього не може бути в Конституції України? – Володимир Гройсман. (2015, December 21). Retrieved February 18, 2019, from https://decentralization.gov.ua/news/1198

APPENDIX A. PREDICTED SCORES

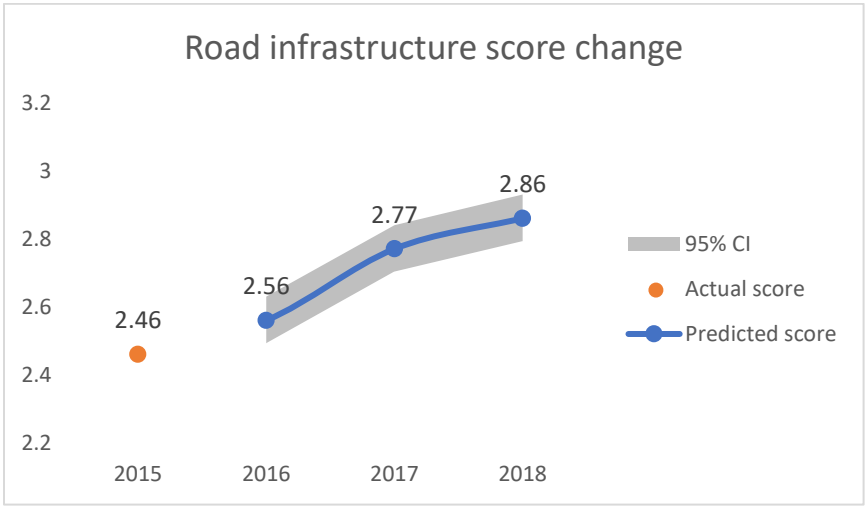

Figure A.1 Predicted score change for road infrastructure

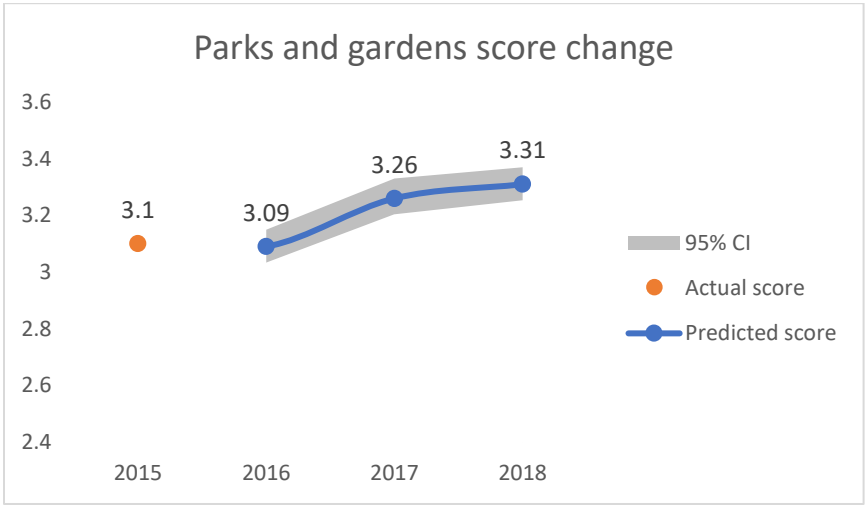

Figure A.2 Predicted score change for parks and gardens

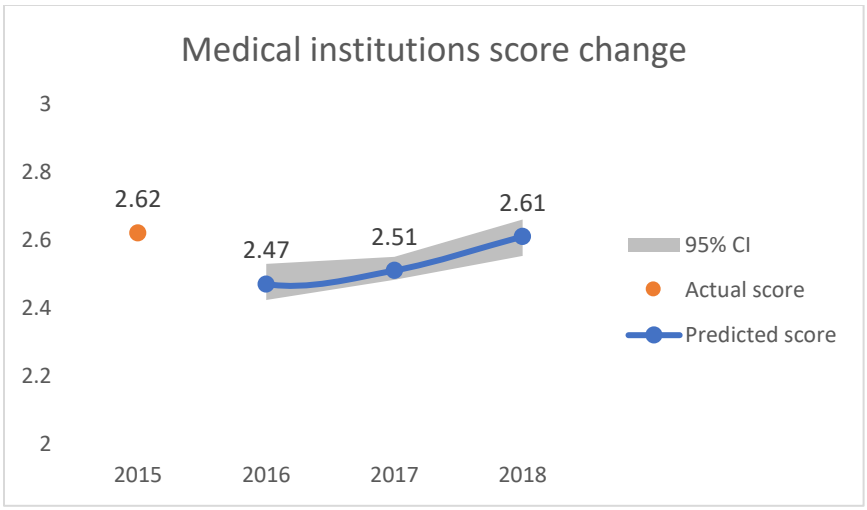

Figure A.3 Predicted score change for medical institutions

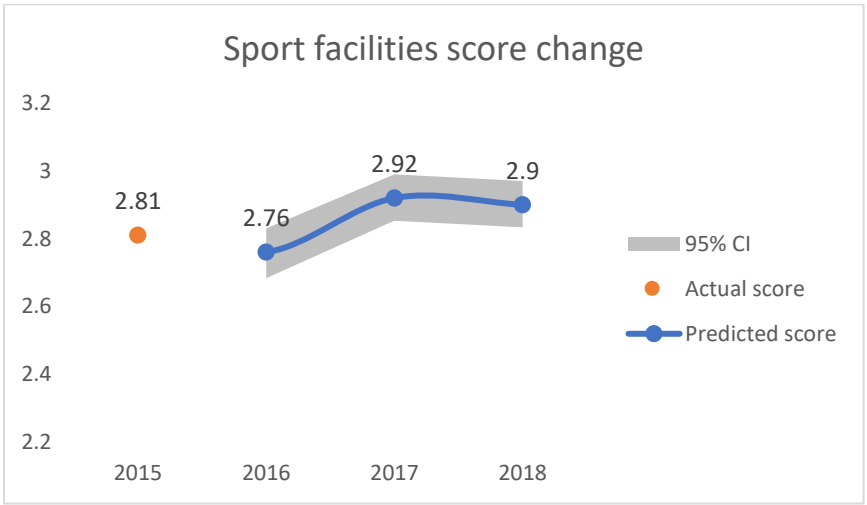

Figure A.4 Predicted score change for sport facilities

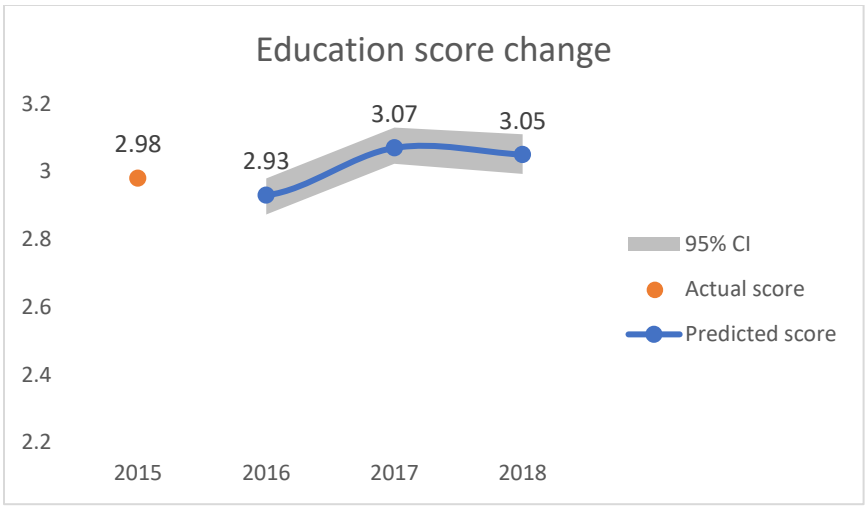

Figure A.5 Predicted score change for education

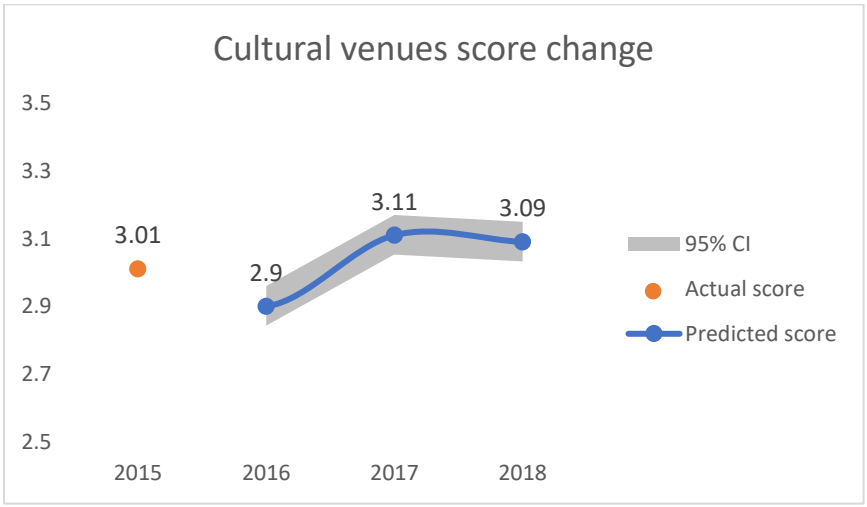

Figure A.6 Predicted score change for cultural venues

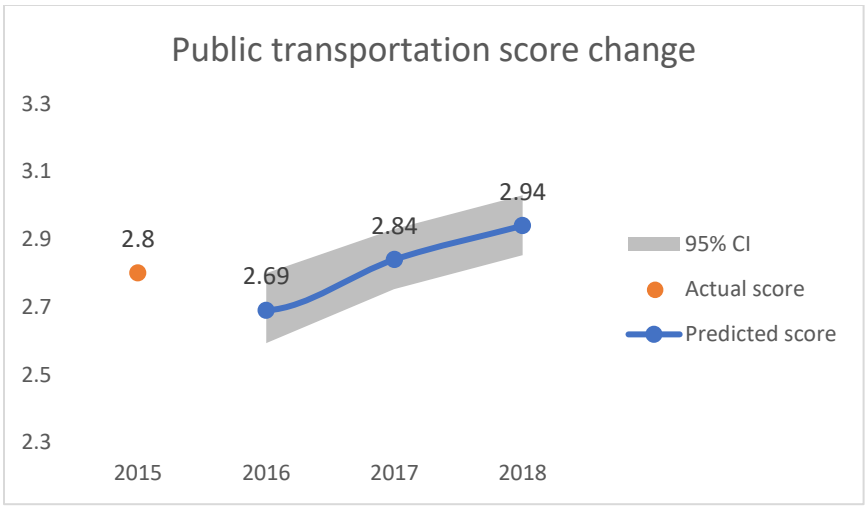

Figure A.7 Predicted score change for public transportation

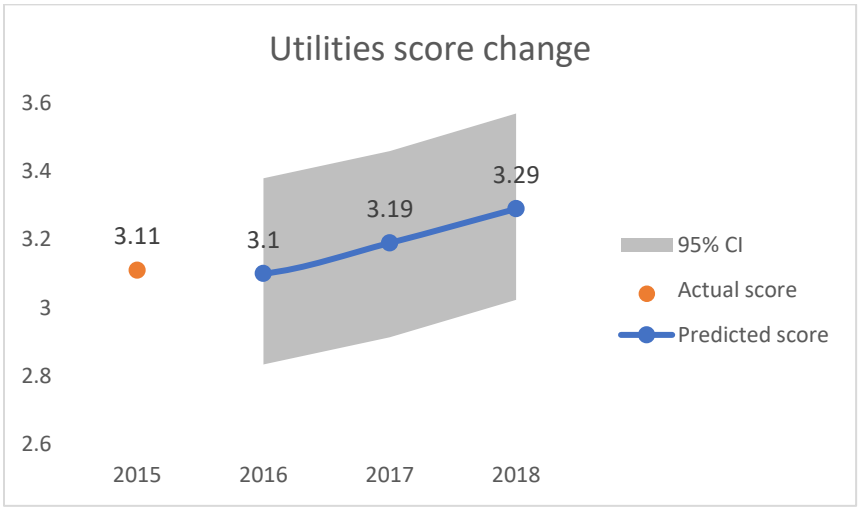

Figure A.8 Predicted score change for utilities (average for trash removal, water supply and sewer)

APPENDIX B. DESCRIPTIVE STATISTICS

Table B.1 Descriptive statistics (average values over the period 2015-2018)

City	Ethnic Fractionali-zation	GDP per capita, in thousands	Total population, in thousands	Urbanization	Corruption	Cost of trash removal	Cost of water supply	Cost of sewer
Cherkasy	13.08	49.49	28.190	56.772	1.39	11.021	6.090	5.248
Chernihiv	12.36	44.04	29.247	64.656	1.12	7.493	9.029	8.189
Chernivtsi	40.65	25.07	26.560	43.020	1.11	9.480	7.863	4.251
Dnipro	33.84	79.48	98.766	83.660	1.45	12.385	6.409	4.569
Ivano-Frankivsk	4.86	38.90	23.205	43.793	1.22	14.796	5.008	6.900
Kharkiv	43.25	57.49	144.809	80.694	1.15	13.575	7.857	4.278
Kherson	30.62	37.45	29.403	61.230	1.18	15.563	6.711	6.551
Khmelnytsky	11.67	39.82	26.845	56.438	1.17	8.088	6.745	6.830
Kirovograd	18.15	47.34	23.042	62.879	1.29	7.988	8.685	7.864
Kyiv	14.02	74.78	291.371	62.725	1.60	23.895	7.111	6.276
Lutsk	5.95	40.55	21.702	52.298	1.30	12.570	5.560	5.524
Lviv	9.94	48.35	72.813	60.960	1.44	22.333	5.910	3.910
Mykolaiv	30.77	50.77	49.134	68.258	1.45	19.060	7.635	5.785
Odesa	53.55	59.75	101.241	66.879	1.47	18.510	7.722	6.352
Poltava	15.99	72.58	29.262	62.008	1.45	10.065	7.760	6.385
Rivne	7.94	37.72	24.797	47.574	1.33	11.863	7.664	5.989
Sumy	20.18	39.37	26.658	68.661	1.52	8.035	5.199	4.710
Ternopil	4.33	35.04	21.813	44.676	1.42	7.800	4.681	6.309
Uzhgorod	32.22	30.11	11.467	37.041	1.51	14.074	10.670	5.820
Vinnytsa	9.76	42.66	37.258	50.867	1.30	12.026	6.018	4.059
Zaporizha	43.55	61.88	75.376	77.204	1.67	10.663	6.438	4.258
Zhytomyr	17.94	39.65	26.796	58.865	1.38	9.133	4.918	6.275
Mariupol	52.81	32.86	47.219	90.735	0.98	10.708	10.113	4.812
Severodonetsk	51.08	12.97	11.678	86.904	1.19	10.315	5.849	6.167
min	4.33	12.97	11.47	37.04	0.98	7.49	4.68	3.91
max	53.55	79.48	291.37	90.73	1.67	23.90	10.67	8.19
median	18.04	41.60	28.72	61.62	1.35	11.44	6.73	5.90
average	24.10	45.76	53.28	62.03	1.34	12.56	6.99	5.72
sd	16.30	15.75	60.39	14.33	0.17	4.53	1.58	1.18

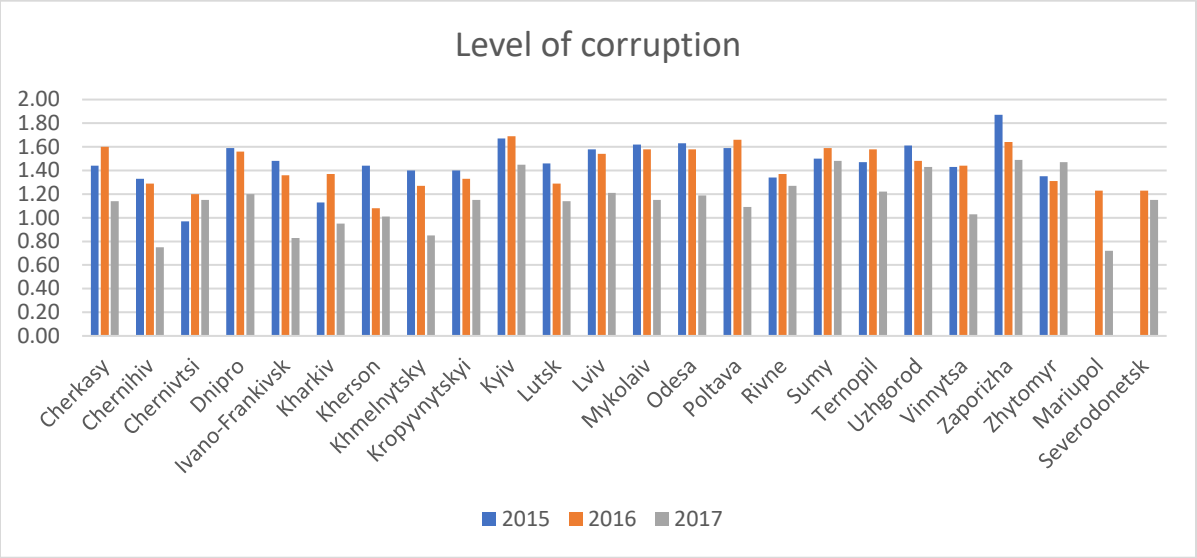

Figure B.1: The change in the level of corruption from 2015 to 2017

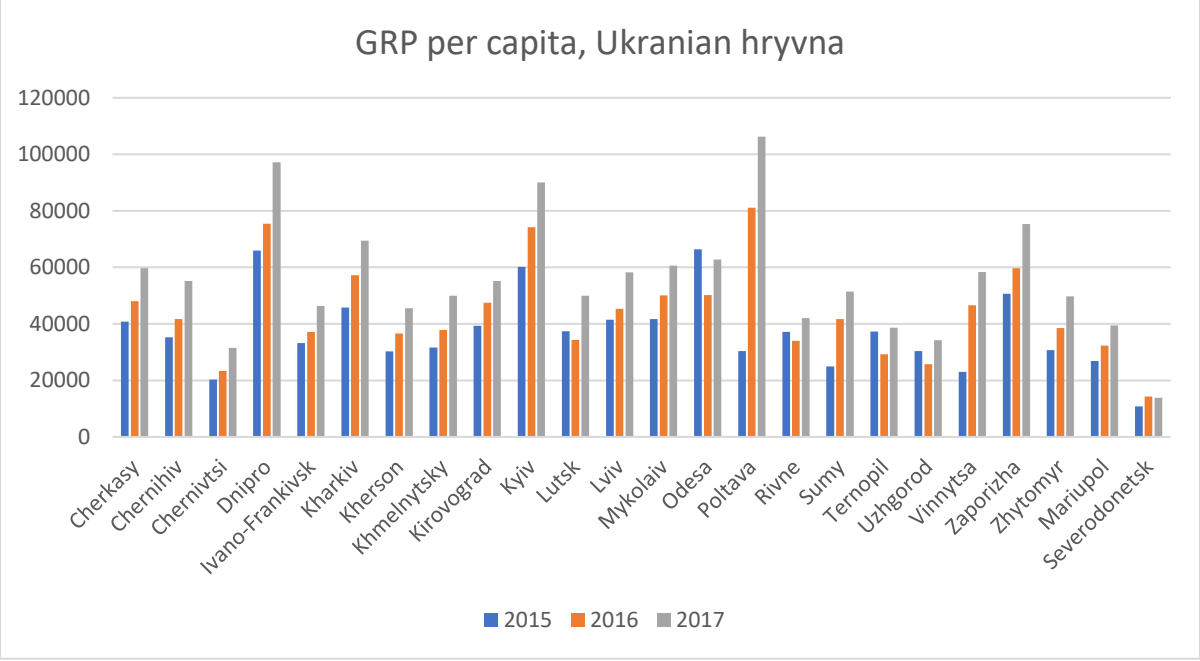

Figure B.2: GRP per capita, Ukrainian hryvna